

UK METEOROLOGICAL OFFICE GLOBAL DATA MONITORING REPORT

NOVEMBER, 94

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1. Introduction

As the WMO-appointed lead centre for monitoring surface marine data, the U.K. Meteorological Office produces monthly statistics on the quality of these observations received at RSMC Bracknell. This report includes this information along with statistics for most other types of data. The figures and tables contained herein are presented according to the agreed standards for the exchange of monitoring results.

The report is based on data received at the UK Meteorological Office Headquarters, Bracknell in time for inclusion into the appropriate analysis. The evaluation of data quality is based on comparison with the appropriate 6-hour global model forecast (background field). Generally, the background field is of high quality except in data sparse areas, tropical regions and areas close to steep orography where care should be taken in interpreting the statistics shown.

Comments or queries on the report are welcome and should be addressed to:-

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2 Global Data Monitoring Statistics

Ships, Fixed buoys, Platforms and Drifting buoys observations

TABLES 1-2 contain lists of the stations which are considered to have returned suspect observations of pressure, windspeed, wind direction or temperature, as appropriate, during the month. The criteria for quality control are given on the header page for each table.

Figures 1 and 2 show 10 degree lat/long box average numbers of SHIP/SYNOP and DRIBU observations received per day throughout the month at Bracknell and assimilated into model runs. Only data from the main hours of 00 UTC, 06 UTC, 12 UTC and 18 UTC are included. Box average values are plotted as the nearest whole number (values of x.5 are rounded up). Where the average is more than 999, then 999 is plotted. A box with no observations is blank. If the 24 hour average >0 but <0.5, then 0 is plotted.

Synop Observations

Table 3 contains a list of stations which are considered to have returned suspect observations of Pressure during the month. The criteria for quality control are given in the header page. The reporting practice of each station is included in the list of statistics.

At RSMC Bracknell, for synoptic stations at or below a height of 500 metres, reported mean sea-level pressure is used in the statistics. If this is unavailable the mean sea-level pressure is calculated from the reported station-level pressure and temperature.

For synoptic stations above 500 metres, the mean sea-level pressure is calculated from the reported station-level pressure and temperature, or, if these are not available the height of a standard pressure-level (e.g.: 850 hPa or 700 hPa). If neither of these are available, the reported mean sea-level pressure is used.

Some stations vary their reporting practice according to the observation hour (e.g.: some stations in the CIS report both mean sea-level and station-level pressure at 00 & 12 UTC, but only mean sea-level pressure at 06 & 18 UTC). For monitoring purposes, reported mean sea-level pressure is stored separately from that calculated from station-level pressure or height of a standard pressure-level. Only statistics for the preferred method (see above) are presented in this report, and so for certain high-level stations, such as those from the CIS, approximately half of the number of observations actually received will appear in the statistics.

Aircraft observations

TABLE 4 contains a list of statistics calculated from data received from all airline carriers.

Figure 3 shows 10 degree lat/long box average numbers of AIREP/ASDAR reports received per day throughout the month at Bracknell and assimilated into model runs in the layer 70-500 hPa. Observations with a vector wind difference (compared with the model background field) of $>60 \text{ ms}^{-1}$ have been excluded. Box average values are plotted as the nearest whole number (values of x.5 are rounded up). Where the average is more than 999, then 999 is plotted. A box with no observations is blank. If the 24 hour average >0 but <0.5 , then 0 is plotted.

Figures 4-7 show wind statistics for AIREP/ASDAR in the layer 70-500 hPa. Observations with a vector wind difference $> 60 \text{ m s}^{-1}$ have been excluded. Statistics have not been calculated for 10 degree lat/long boxes containing <31 observations.

Figure	Parameter
4	Mean wind vectors
5	Mean observation - background wind vector
6	Mean observation-background speed (m s^{-1})
7	RMS observation-background vector (m s^{-1})

Radiosonde Observations

TABLES 5-7 contain lists of the stations which are considered to have returned suspect observations of geopotential height, vector wind or wind direction, as appropriate, during the month. The criteria for quality control are given on the header page for each table.

Figures 8 and 9 show 10 degree lat/long box average numbers of TEMP 500 hPa GEOPOTENTIAL HEIGHT and TEMP/PILOT 300 hPa WIND observations received per day throughout the month at Bracknell and assimilated into model runs. Data from all hours are included. Box average values are plotted as the nearest whole number (values of x.5 are rounded up). Where the average is more than 999, then 999 is plotted. A box with no observations is blank. If the 24 hour average >0 but <0.5 , then 0 is plotted.

APPENDIX I shows details of the gross error limits used in TABLES 5 and 6 and the weights used in the RMS values in TABLE 5.

Satellite Observations

Figures 10-24 show satellite wind statistics for all geostationary satellites. All plots other than **AVAILABILITY** show average data where there are > 10 observations in a 10 degree lat/long box.

Figure	Parameter Plotted	Layer (hPa)
10	Availability/average daily number	701-1000
11	Vector mean wind (observed)	701-1000
12	Observation-background vector wind difference	701-1000
13	Mean observation-background speed differences	701-1000
14	RMS observation-background vector difference	701-1000
15	Availability/average daily number	401-700
16	Vector mean wind (observed)	401-700
17	Observation-background vector wind difference	401-700
18	Mean observation-background speed differences	401-700
19	RMS observation-background vector difference	401-700
20	Availability/average daily number	101-400
21	Vector mean wind (observed)	101-400
22	Observation-background vector wind difference	101-400
23	Mean observation-background speed differences	101-400
24	RMS observation-background vector difference	101-400

Figures 25-27 show satellite mean observation-background temperature differences for NOAA-11 soundings at 500 km resolution and figures 28-30 show the same statistics for NOAA-12. Data are plotted where there are > 30 observations in a 10 degree lat/long box.

Figure	Layer (hPa)
25/28	850-1000
26/29	100-300
27/30	30-50

3 Composite Observing Systems for the North Atlantic (COSNA)

This section shows statistics for upper air (radiosonde and aircraft) and surface (drifter) data for the North Atlantic area for data received at Bracknell during the month.

TABLE 8 shows quality statistics for **Mean Sea-level Pressure, Windspeed and Wind Direction** received at Bracknell in DRIFTER code during the month for the area 10°N - 80°N, 85°W - 0°W.

TABLE 9 shows quality statistics for **Temperature and Vector Wind** received at Bracknell from aircraft during the month for the area 40°N - 70°N, 60°W - 0°W.

Table 10 - 13 show quality statistics (**Geopotential Height and Windspeed at 100 and 500 hPa**) for all TEMPSHIPS in the area bounded by 0°N - 90°N, 100°W - 40°E and selected TEMP stations within the same area.

TABLE 1

MONITORING OF MARINE SURFACE OBSERVATIONS
MONTHLY SUSPECT LIST - SHIPS, FIXED BUOYS AND PLATFORMS
MONITORING CENTRE: BRACKNELL
MONTH: November, 94

Monitoring procedures

Period	:One calendar month.
Data monitored	:Reports from each unique identifier for ships, fixed buoys and platforms.
Standard of comparison	:Background field from Bracknell global model.
Observation times	:00, 06, 12, 18 UTC
Elements monitored	:Mean sea level pressure (hPa). :Wind speed (m s^{-1}). :Wind direction (Degrees).

Parameters monitored

:NOBS	:Number of observations received excluding duplicates.
:NGE	:Number of observations with gross errors.
:PGE	:Percentage of observations with gross errors.
:SD	:SD of difference of observations from background values excluding those with gross errors.
:BIAS	:Mean difference of observations from background values excluding those with gross errors. N.B. a positive bias indicates the observation is veered to the background.
:RMS	:Root Mean Square difference of observations from background values excluding those with gross errors.

GROSS ERROR LIMIT

:15 hPa (pressure)
:25 m s^{-1} (vector wind)

SELECTION CRITERIA

:NOBS	≥ 20 , and one or more of the following:	
1. bias	≥ 4 hPa	(pressure),
	≥ 5 m s^{-1}	(wind speed),
	≥ 30 degrees	(direction).
2. SD	≥ 6 hPa	(pressure),
	≥ 80 degrees	(direction).
3. PGE	≥ 25	

IDENTIFIER	HOUR	ELEM	LEVEL	NOBS	NGE	PGE	SD	BIAS	RMS
MEAN SEA LEVEL PRESSURE									
CG3198	ALL	MSLP	SUR	22	0	0	1.8	4.0	4.4
C6JG8	ALL	MSLP	SUR	41	0	0	1.9	4.7	5.1
C6KB6	ALL	MSLP	SUR	80	0	0	1.6	-5.7	6.0
DQGJ	ALL	MSLP	SUR	37	0	0	2.7	-4.2	5.0
ESCA	ALL	MSLP	SUR	20	0	0	0.8	12.8	12.8
ESXD	ALL	MSLP	SUR	21	0	0	0.8	9.1	9.2
KHLN	ALL	MSLP	SUR	21	0	0	1.2	-6.1	6.2
OUSH2	ALL	MSLP	SUR	26	13	50	5.8	-5.7	8.1
UFBE	ALL	MSLP	SUR	25	0	0	1.7	4.0	4.3
UOPQ	ALL	MSLP	SUR	47	1	2	1.7	11.1	11.2
UVZP	ALL	MSLP	SUR	30	0	0	1.4	-7.1	7.3
UZET	ALL	MSLP	SUR	48	0	0	4.1	-4.0	5.7
VCPK	ALL	MSLP	SUR	22	13	59	4.2	-3.3	5.4
VPHW	ALL	MSLP	SUR	31	0	0	1.2	-6.8	6.8
VRKO	ALL	MSLP	SUR	23	0	0	2.6	-4.2	5.0
VRUA4	ALL	MSLP	SUR	92	0	0	1.4	5.0	5.2
V2EF	ALL	MSLP	SUR	27	0	0	1.1	-4.3	4.4
WCB5820	ALL	MSLP	SUR	45	0	0	2.1	7.1	7.4
WE4879	ALL	MSLP	SUR	53	0	0	2.6	-4.0	4.7
WXY6216	ALL	MSLP	SUR	21	0	0	2.3	-5.9	6.3
WZE4928	ALL	MSLP	SUR	57	56	98	0.0	14.4	14.4
3EAY5	ALL	MSLP	SUR	31	0	0	1.5	-6.0	6.2
WIND SPEED									
C6DY8	ALL	SPEED	SUR	42	0	0	4.3	8.3	9.3
C6JD4	ALL	SPEED	SUR	27	0	0	5.0	10.5	11.7
DLCX	ALL	SPEED	SUR	45	0	0	4.7	5.2	7.0
DQFU	ALL	SPEED	SUR	30	0	0	5.5	5.6	7.9
ELLE9	ALL	SPEED	SUR	39	1	3	3.5	8.7	9.4
FNH	ALL	SPEED	SUR	160	1	1	5.7	9.2	10.8
HPKW	ALL	SPEED	SUR	23	0	0	5.0	14.6	15.4
JXSM	ALL	SPEED	SUR	21	0	0	2.7	-5.0	5.7
LALA2	ALL	SPEED	SUR	22	0	0	3.5	5.3	6.4
OUEV	ALL	SPEED	SUR	34	1	3	5.9	5.1	7.8
UNXL	ALL	SPEED	SUR	34	0	0	4.8	5.5	7.3
VROT	ALL	SPEED	SUR	22	0	0	1.1	-5.1	5.2
V2EF	ALL	SPEED	SUR	27	0	0	2.8	5.4	6.1
WLDK	ALL	SPEED	SUR	32	0	0	6.2	6.0	8.6
WIND DIRECTION									
A8FJ	ALL	DIRN.	SUR	47	0	0	45.1	30.2	54.3
CG2614	ALL	DIRN.	SUR	65	0	0	25.0	30.4	39.4
ZCAQ9	ALL	DIRN.	SUR	38	0	0	37.8	30.2	48.4
44013	ALL	DIRN.	SUR	89	0	0	22.5	-30.1	37.6
46131	ALL	DIRN.	SUR	76	0	0	47.5	-30.1	56.3
46181	ALL	DIRN.	SUR	35	0	0	93.0	-5.2	93.2

AVAILABILITY - SHIP/SYNOP - NOVEMBER 1994

MAIN HOURS ONLY

10 DEGREE BOX AVERAGE NUMBER OF OBSERVATIONS IN 24 HOURS

TOTAL AVERAGE NUMBER OF OBSERVATIONS IN 24 HOURS = 19261

FIGURE 1

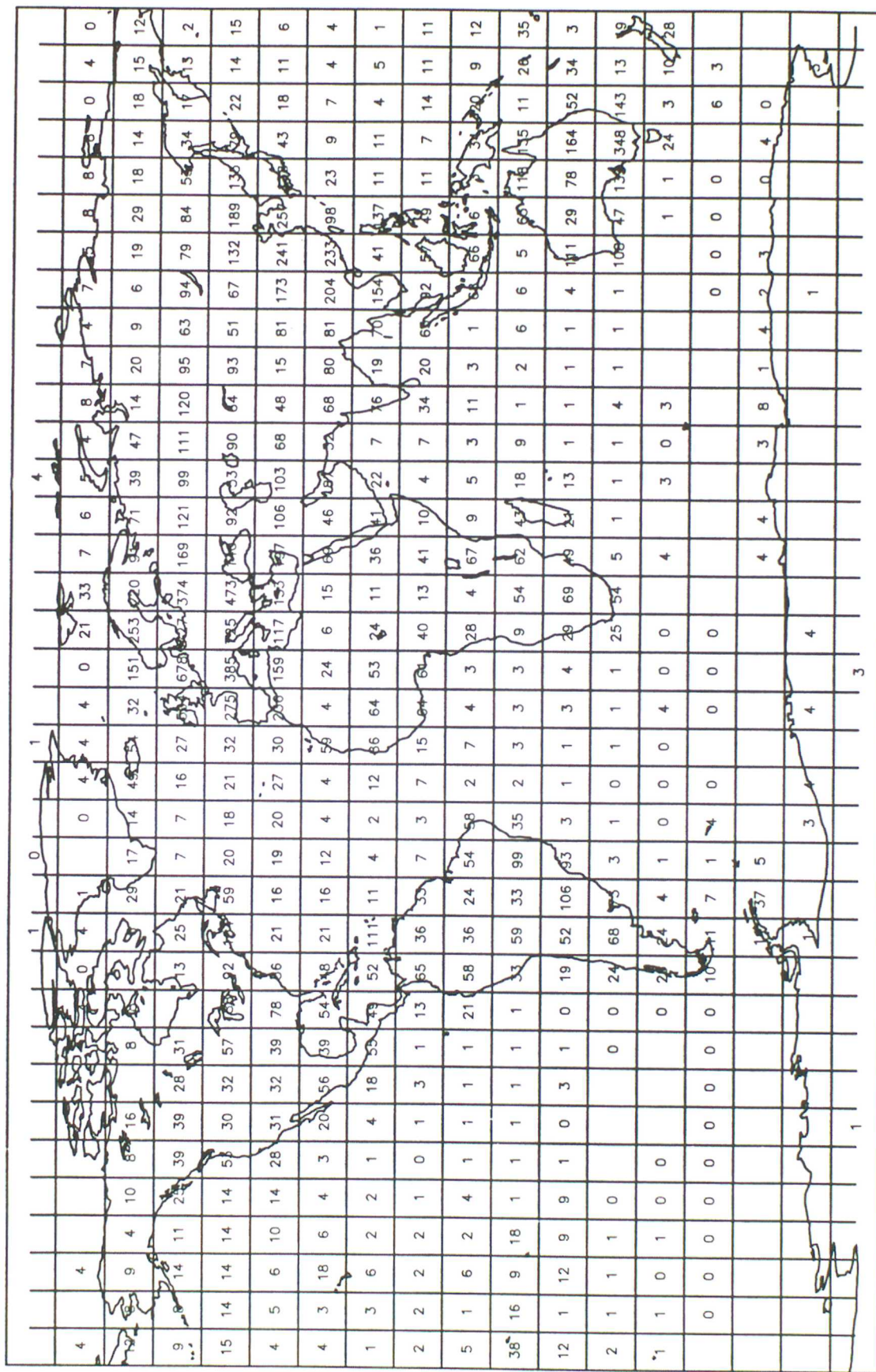


TABLE 2

MONITORING OF MARINE SURFACE OBSERVATIONS
MONTHLY SUSPECT LIST - DRIFTING BUOYS
MONITORING CENTRE: BRACKNELL
MONTH: November, 94

Monitoring procedures

Period	:One calendar month.
Data monitored	:Reports from each unique identifier for drifting buoys.
Standard of comparison	:Background field from Bracknell global model.
Position	:Average latitude and longitude for period.
Observation times	:00, 06, 12, 18 UTC
Elements monitored	:Mean sea level pressure (hPa). :Wind speed (m s^{-1}). :Wind direction (degrees).

Parameters monitored

:NOBS	:Number of observations received excluding duplicates.
:NGE	:Number of observations with gross errors.
:PGE	:Percentage of observations with gross errors.
:SD	:SD of difference of observations from background values excluding those with gross errors.
:BIAS	:Mean difference of observations from background values excluding those with gross errors. N.B. a positive bias indicates the observation is veered to the background.
:RMS	:Root Mean Square difference of observations from background values excluding those with gross errors.

GROSS ERROR LIMIT

:15 hPa	(pressure)
:25 m s^{-1}	(vector wind)

SELECTION CRITERIA

:NOBS	≥ 20	, and one or more of the following:
1. bias	≥ 4 hPa	(pressure),
	≥ 5 m s^{-1}	(wind speed),
	≥ 30 degrees	(direction).
2. SD	≥ 6 hPa	(pressure),
	≥ 80 degrees	(direction).
3. PGE	≥ 25 .	

IDENTIFIER	HOUR	ELEM	LEVEL	NOBS	NGE	PGE	SD	BIAS	RMS		
MEAN SEA LEVEL PRESSURE											
31907	-50.1	-22.2	ALL	MSLP	SUR	60	0	0	6.6	0.0	6.6
46661	48.0	-142.8	ALL	MSLP	SUR	20	5	25	1.9	-0.7	2.0
48561	83.3	-7.4	ALL	MSLP	SUR	70	0	0	1.3	-4.5	4.7
52644	19.2	128.7	ALL	MSLP	SUR	109	7	6	3.3	-5.7	6.6
55589	-40.9	175.0	ALL	MSLP	SUR	35	22	63	0.7	1.1	1.3
62508	44.9	-14.1	ALL	MSLP	SUR	129	16	12	5.2	-6.1	8.0
74801	-59.3	69.4	ALL	MSLP	SUR	199	49	25	6.2	3.4	7.1
WIND SPEED											
46527	44.6	169.8	ALL	SPEED	SUR	89	0	0	2.8	-5.9	6.6
52525	23.4	129.1	ALL	SPEED	SUR	73	0	0	1.5	-7.1	7.2
64544	60.7	-41.1	ALL	SPEED	SUR	205	0	0	4.1	-6.3	7.5
WIND DIRECTION											
21527	32.9	137.6	ALL	DIRN.	SUR	56	0	0	84.0	-1.4	84.0
21577	35.8	130.8	ALL	DIRN.	SUR	55	0	0	82.4	5.0	82.5
52525	23.4	129.1	ALL	DIRN.	SUR	69	0	0	29.5	-49.7	57.8
55587	-33.1	158.5	ALL	DIRN.	SUR	134	0	0	43.7	-39.2	58.7

FIGURE 2

MAIN HOURS ONLY

10 DEGREE BOX AVERAGE NUMBER OF OBSERVATIONS IN 24 HOURS

TOTAL AVERAGE NUMBER OF OBSERVATIONS IN 24 HOURS = 2883

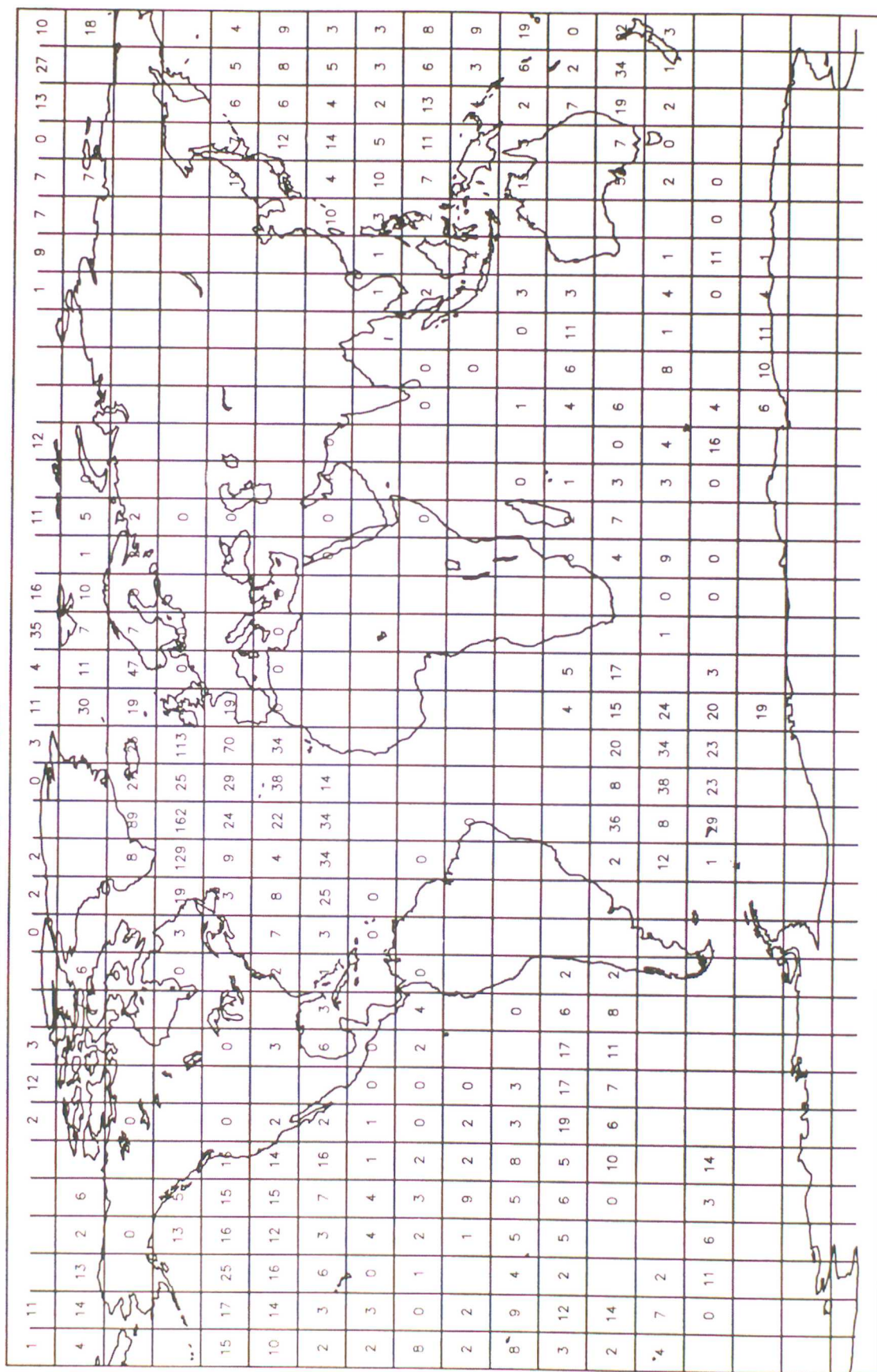


TABLE 3

MONITORING OF LAND SURFACE OBSERVATIONS
MONTHLY SUSPECT LIST - SYNOPS & AUTOSYNOPS
MONITORING CENTRE: BRACKNELL
MONTH: November, 94

Monitoring procedures

Period	:One calendar month.	
Data monitored	:Reports from each unique identifier for synops & autosynops.	
Standard of comparison	:Background field from Bracknell global model.	
Observation times	:00, 06, 12, 18 UTC	
Elements monitored	:Mean sea level pressure (hPa).	
Parameters monitored	:HT(m)	:Station height (in metres) as given in WMO No. 9 Vol A
	:RP	:Pressure reporting practice M=mean sea level pressure (hPa) reported. S=Station level pressure reported. 8=Geopotential height (m) of 850 hPa surface reported. 7=Geopotential height (m) of 700 hPa surface reported.
	:NOBS	:Number of observations received excluding duplicates.
	:NGE	:Number of observations with gross errors.
	:PGE	:Percentage of observations with gross errors.
	:%REJ	:Percentage of observations flagged.
	:SD	:SD of difference of observations from background values excluding those with gross errors.
	:BIAS	:Mean difference of observations from background values excluding those with gross errors.
	:RMS	:Root Mean Square difference of observations from background values excluding those with gross errors.
GROSS ERROR LIMIT	:15 hPa	(pressure)
SELECTION CRITERIA	:NOBS	≥ 20 ,and one or more of the following:
	1. bias	≥ 4 hPa
	2. SD	≥ 6 hPa
	3. PGE	≥ 25.

Note:- For stn ht ≥ 500m, mslp is that calculated from station level pressure where available.
For stn ht < 500m, mslp is that as reported by the station where available.

WMO REGION 1:

STATION	LAT	LONG	HT(M)	RP	NOBS	NGE	PGE	%REJ	SD	BIAS	RMS
60445	36.2N	5.4E	1081	S8	106	0	0	81	1.2	4.3	4.5
60468	35.6N	6.2E	1052	S8	107	107	100	2	0.0	0.0	0.0
60511	35.3N	1.4E	1127	S8	99	98	99	100	0.0	6.9	6.9
60571	31.6N	2.2W	773	S8	110	0	0	35	0.9	-4.6	4.7
60670	24.6N	9.5E	1054	S8	110	2	2	97	1.3	8.5	8.6
61731	13.3N	14.2W	4	M	21	0	0	24	0.9	-4.6	4.7
62795	12.7N	34.1E	445	MS	30	0	0	0	0.9	-4.9	5.0
63333	11.1N	39.7E	1916	MS	44	0	0	98	1.1	7.0	7.1
63453	8.8N	39.8E	1062	S	40	3	8	100	1.3	12.7	12.8
63474	7.1N	40.0E	2450	S	36	36	100	0	0.0	0.0	0.0
63478	5.1N	44.6E	320	MS	31	0	0	0	0.9	7.5	7.6
63801	4.9S	29.6E	885	S8	25	0	0	100	1.2	8.4	8.5
64507	2.9S	11.0E	79	M	48	0	0	0	1.4	-7.2	7.3
64911	5.0N	9.9E	821	8	55	0	0	36	1.3	-5.6	5.7
68014	19.6S	18.1E	1411	S8	45	0	0	69	1.3	-5.6	5.7
68752	32.8S	27.4E	524	S8	72	0	0	100	1.2	-8.3	8.4

WMO REGION 2:

STATION	LAT	LONG	HT(M)	RP	NOBS	NGE	PGE	%REJ	SD	BIAS	RMS
23383	66.9N	93.5E	263	MS	86	1	1	22	3.9	4.8	6.2
24671	63.9N	135.9E	400	MS	98	2	2	67	3.9	7.9	8.8
25538	64.1N	164.6E	326	MS	103	2	2	25	2.6	4.5	5.2
25902	60.8N	151.8E	797	MS	50	26	52	98	1.3	-13.1	13.2
29999	52.5N	99.8E	1570	M	86	85	99	80	0.0	-11.8	11.8
30253	57.9N	114.2E	278	MS	93	0	0	23	3.1	4.6	5.5
30554	54.5N	113.6E	995	MS	55	1	2	98	1.2	10.2	10.3
30669	53.1N	117.5E	707	MS	55	1	2	2	1.9	-4.2	4.6
30739	52.2N	109.8E	666	MS	56	1	2	23	1.6	-6.8	7.0
30741	52.9N	110.5E	1255	S8	108	2	2	44	1.8	-6.3	6.6
31532	50.8N	132.2E	234	M	82	0	0	29	2.7	4.5	5.2
38609	40.1N	70.6E	832	MS	50	1	2	80	1.2	-4.4	4.6
38611	41.0N	71.6E	465	MS	109	0	0	4	1.9	5.0	5.3
38696	39.6N	66.9E	675	MS	55	2	4	96	0.9	-5.3	5.4
38836	38.6N	68.8E	824	MS	51	2	4	2	1.3	4.1	4.3
40356	31.7N	38.7E	818	S8	114	0	0	95	0.8	-4.8	4.9
40376	27.6N	38.6E	860	MS	36	36	100	0	0.0	0.0	0.0
40432	25.8N	42.0E	783	MS	36	36	100	0	0.0	0.0	0.0
40450	23.7N	44.6E	1080	MS	36	36	100	0	0.0	0.0	0.0
40701	39.3N	44.4E	1470	MS	96	2	2	86	1.2	7.3	7.4
40726	36.8N	45.7E	1385	MS	87	0	0	46	1.1	4.4	4.5
40743	36.2N	57.7E	941	MS	111	0	0	14	1.3	-4.3	4.5
40762	35.3N	59.2E	1333	S	109	11	10	99	0.9	-13.1	13.1
40763	35.2N	58.5E	1060	MS	52	0	0	15	1.1	-5.2	5.3
40783	32.4N	49.7E	1972	MS	51	0	0	100	1.4	-7.6	7.7
40789	33.8N	55.1E	921	MS	78	2	3	99	3.6	7.3	8.1
40818	31.2N	52.7E	2004	MS	88	0	0	32	1.2	-4.1	4.3
40836	30.8N	51.7E	1880	MS	88	0	0	95	1.3	7.9	8.0
40859	29.0N	53.7E	1383	MS	83	0	0	100	1.2	9.6	9.7
41254	23.1N	57.7E	1755	S8	85	85	100	22	0.0	0.0	0.0
41396	16.0N	48.9E	700	MS	28	1	4	71	1.2	6.5	6.6
44277	46.4N	96.3E	2147	MS	83	1	1	53	1.7	-7.0	7.2
44292	47.9N	107.0E	1338	MS	79	0	0	65	1.8	4.4	4.8
44416	28.6N	81.6E	720	MS	74	1	1	38	1.7	5.5	5.8
44477	27.0N	87.4E	1445	S8	60	60	100	98	0.0	0.0	0.0
51334	44.6N	82.9E	321	M	115	0	0	17	2.5	5.1	5.7
51467	42.7N	86.3E	1753	S	115	0	0	23	1.4	5.6	5.8
52378	41.4N	102.4E	960	M	115	0	0	19	2.0	4.1	4.6
52602	38.8N	93.4E	2734	S	114	0	0	18	1.6	-5.1	5.3

WMO REGION 2:

STATION	LAT	LONG	HT (M)	RP	NOBS	NGE	PGE	%REJ	SD	BIAS	RMS
52866	36.7N	101.8E	2296	S	116	1	1	56	1.3	5.4	5.6
53083	44.6N	114.2E	1183	M	115	0	0	47	2.6	4.1	4.9
53352	41.7N	110.4E	1377	M	114	0	0	30	2.2	4.9	5.4
53480	41.0N	113.1E	1416	M	113	0	0	35	2.7	4.4	5.2
53487	40.1N	113.3E	1069	M	115	0	0	11	2.0	4.2	4.7
53502	39.8N	105.8E	1033	M	115	0	0	43	2.1	4.7	5.1
53705	37.5N	105.7E	1185	M	115	0	0	3	1.6	4.1	4.4
53764	37.5N	111.1E	951	M	115	1	1	6	1.5	4.0	4.3
53923	35.7N	107.6E	1423	M	115	0	0	26	1.9	4.2	4.6
56144	31.7N	98.6E	3204	S	105	1	1	57	1.8	-5.0	5.3
56385	29.5N	103.3E	3049	S	115	0	0	16	1.2	-4.3	4.5
56444	28.5N	98.9E	3488	S	110	110	100	99	0.0	0.0	0.0
56462	29.0N	101.5E	2994	S	111	1	1	99	2.1	6.4	6.7
57006	34.6N	105.8E	1143	M	112	0	0	5	1.9	4.7	5.1
57622	28.9N	107.2E	1907	S	98	1	1	100	1.2	-12.3	12.4
57816	26.5N	106.7E	1222	MS	112	106	95	98	0.6	14.1	14.1

WMO REGION 3:

STATION	LAT	LONG	HT (M)	RP	NOBS	NGE	PGE	%REJ	SD	BIAS	RMS
82704	7.6S	72.7W	170	MS	70	0	0	3	2.9	-4.0	4.9
83208	12.7S	60.1W	652	MS	51	0	0	16	2.0	5.8	6.1
83235	12.3S	46.4W	660	MS	35	0	0	91	1.0	6.2	6.3
83295	13.4S	39.9W	755	MS	28	0	0	79	0.7	-4.8	4.9
83332	14.1S	46.4W	950	MS	72	13	18	100	0.9	13.2	13.2
83423	16.7S	49.3W	729	MS	72	0	0	51	1.3	-5.3	5.5
83488	17.8S	42.9W	1097	MS	76	76	100	99	0.0	0.0	0.0
83512	18.5S	54.8W	286	MS	68	0	0	3	2.2	-5.4	5.8
83531	18.6S	46.5W	896	MS	78	0	0	55	1.3	-6.6	6.7
83587	19.8S	43.9W	850	MS	82	1	1	80	1.3	-7.8	7.9
83618	20.8S	51.6W	313	MS	40	0	0	23	3.6	5.2	6.3
83623	20.4S	50.0W	503	MS	22	0	0	82	1.7	-6.9	7.1
83689	21.3S	43.8W	1171	MS	64	0	0	83	1.1	4.6	4.7
83704	22.3S	53.9W	369	MS	50	0	0	48	4.7	-5.2	7.0
83811	24.4S	50.8W	808	M	42	0	0	17	3.1	4.3	5.3
84425	5.9S	76.1W	184	MS	84	0	0	4	2.9	4.6	5.4
84455	6.5S	76.4W	282	MS	82	1	1	4	3.0	5.3	6.1
84472	7.1S	78.5W	2622	M	48	0	0	100	1.8	-8.2	8.4
84501	8.1S	79.0W	30	MS	112	0	0	0	1.7	4.4	4.7
84531	9.2S	78.5W	21	MS	51	0	0	0	1.3	5.6	5.7
84658	12.6S	69.2W	266	MS	80	0	0	0	2.8	5.4	6.1
84686	13.6S	72.0W	3249	S	106	1	1	47	1.9	-8.1	8.3
84782	18.1S	70.3W	469	MS	103	0	0	0	1.7	5.3	5.6
85223	17.4S	66.1W	2548	S7	100	0	0	47	2.0	-5.4	5.8
85365	22.0S	63.7W	643	MS	52	0	0	12	3.3	4.3	5.4
85406	18.3S	70.3W	58	M	110	0	0	2	1.3	5.6	5.7
87046	24.4S	65.1W	905	S8	85	82	96	96	0.2	-0.2	0.3
87322	31.3S	66.6W	658	MS	71	71	100	1	0.0	0.0	0.0
87506	35.5S	69.6W	1425	S8	83	1	1	5	2.0	-4.2	4.7
87814	43.8S	68.9W	460	MS	54	0	0	0	1.3	-4.6	4.8

WMO REGION 4:

STATION	LAT	LONG	HT(M)	RP	NOBS	NGE	PGE	%REJ	SD	BIAS	RMS
70251	62.3N	150.1W	109	MS	31	0	0	3	2.4	4.5	5.1
71966	64.1N	139.1W	370	MS	58	0	0	9	3.2	4.5	5.5
76118	30.4N	109.7W	1040	MS	39	0	0	100	1.4	-9.7	9.8
76373	25.3N	105.8W	1967	MS	61	56	92	98	0.0	14.6	14.6
76539	22.1N	101.0W	1871	MS	94	0	0	83	1.3	-4.9	5.1
76632	20.1N	98.7W	2417	MS	62	0	0	98	1.2	-7.9	8.0
76692	19.1N	96.1W	13	MS	84	0	0	0	1.3	4.6	4.8
76723	18.7N	111.0W	35	MS	68	0	0	0	0.9	4.2	4.3
76726	18.9N	99.3W	1560	MS	83	1	1	99	1.3	-8.0	8.1
76762	17.5N	99.5W	1360	MS	67	1	1	100	1.0	11.3	11.3
76848	16.3N	92.1W	1530	M	95	14	15	100	1.0	-13.6	13.6

WMO REGION 5:

STATION	LAT	LONG	HT(M)	RP	NOBS	NGE	PGE	%REJ	SD	BIAS	RMS
94001	6.1S	141.3E	-9999	M	78	0	0	0	1.0	4.1	4.2

WMO REGION 6:

STATION	LAT	LONG	HT(M)	RP	NOBS	NGE	PGE	%REJ	SD	BIAS	RMS
01245	62.6N	9.7E	630	MS	82	2	2	99	1.2	-5.4	5.5
08221	40.5N	3.6W	633	MS	108	0	0	99	1.0	6.8	6.9
11141	47.4N	13.2E	550	MS	114	0	0	18	1.9	4.6	5.0
11360	47.5N	14.1E	710	MS	29	0	0	17	1.4	4.3	4.5
11735	50.1N	17.2E	1512	S8	115	0	0	63	2.3	-4.1	4.7
13369	43.3N	20.0E	1039	8	110	1	1	59	1.6	-4.0	4.3
15052	47.4N	25.6E	1541	S8	114	3	3	96	2.0	-6.3	6.6
16020	46.5N	11.3E	1461	MS	56	56	100	0	0.0	0.0	0.0
16134	44.2N	10.7E	2173	S8	113	1	1	36	1.6	-4.5	4.8
16614	40.4N	21.3E	604	MS	113	1	1	99	1.0	-7.4	7.5
17084	40.6N	35.0E	837	MS	111	0	0	99	1.1	8.2	8.3
17190	38.8N	30.5E	1034	S8	110	0	0	79	1.2	5.0	5.1
17260	37.1N	37.4E	855	MS	108	106	98	99	5.9	8.3	10.2
40184	31.8N	35.2E	809	S8	113	0	0	100	1.2	6.5	6.6

ANTARCTIC:

STATION	LAT	LONG	HT(M)	RP	NOBS	NGE	PGE	%REJ	SD	BIAS	RMS
89264	71.4S	68.9W	780	S8	39	0	0	46	3.3	7.0	7.7
89324	80.0S	120.0W	1530	S8	55	4	7	18	3.7	-4.5	5.8
89757	73.8S	55.7E	2775	S7	69	69	100	57	0.0	0.0	0.0
89803	68.5S	102.2E	2118	S7	80	1	1	68	2.2	-9.3	9.6
89805	74.1S	109.8E	3070	S7	82	22	27	20	4.3	0.1	4.3
89811	66.7S	112.9E	1362	S8	81	1	1	58	3.3	-7.3	8.0
89828	74.5S	123.0E	3280	S7	54	15	28	63	3.1	8.0	8.6
89832	66.7S	139.8E	240	MS	56	56	100	100	0.0	0.0	0.0
89860	74.2S	160.3E	1772	S8	51	0	0	20	2.1	-6.6	6.9

TABLE 4

MONTHLY MONITORING OF AIRCRAFT OBSERVATIONS
 MONITORING CENTRE: BRACKNELL
 MONTH: November, 94

Monitoring procedures

Period	:One calendar month.
Data monitored	:Statistics for each airline carrier.
Area monitored	:90°N - 90°S, 180°W - 180°E.
Standard of comparison	:Background field from Bracknell global model.
Observation times	:All hours combined.
Level(s) monitored	:70.0 - 500.0 hPa
Elements monitored	:TEMP in °C ; WIND in m s ⁻¹
Parameters monitored	
:N REP.	:Number of observations received excluding duplicates.
:PG	:Percentage of observations with gross errors.
:PR	:Percentage of observations rejected by quality control including rejections from the duplicate check.
:PC	:Percentage of observations with calm winds.
:RMS	:Root Mean Square difference of observations from background values excluding those with gross errors in Temperature & vector wind.
:BIAS	:Mean difference of observations from background values excluding those with gross errors in Temperature & Wind Speed.
GROSS ERROR LIMITS	:10.0 °C ; 60 m s ⁻¹ Vector Wind
SELECTION CRITERIA	:N REP ≥ 20

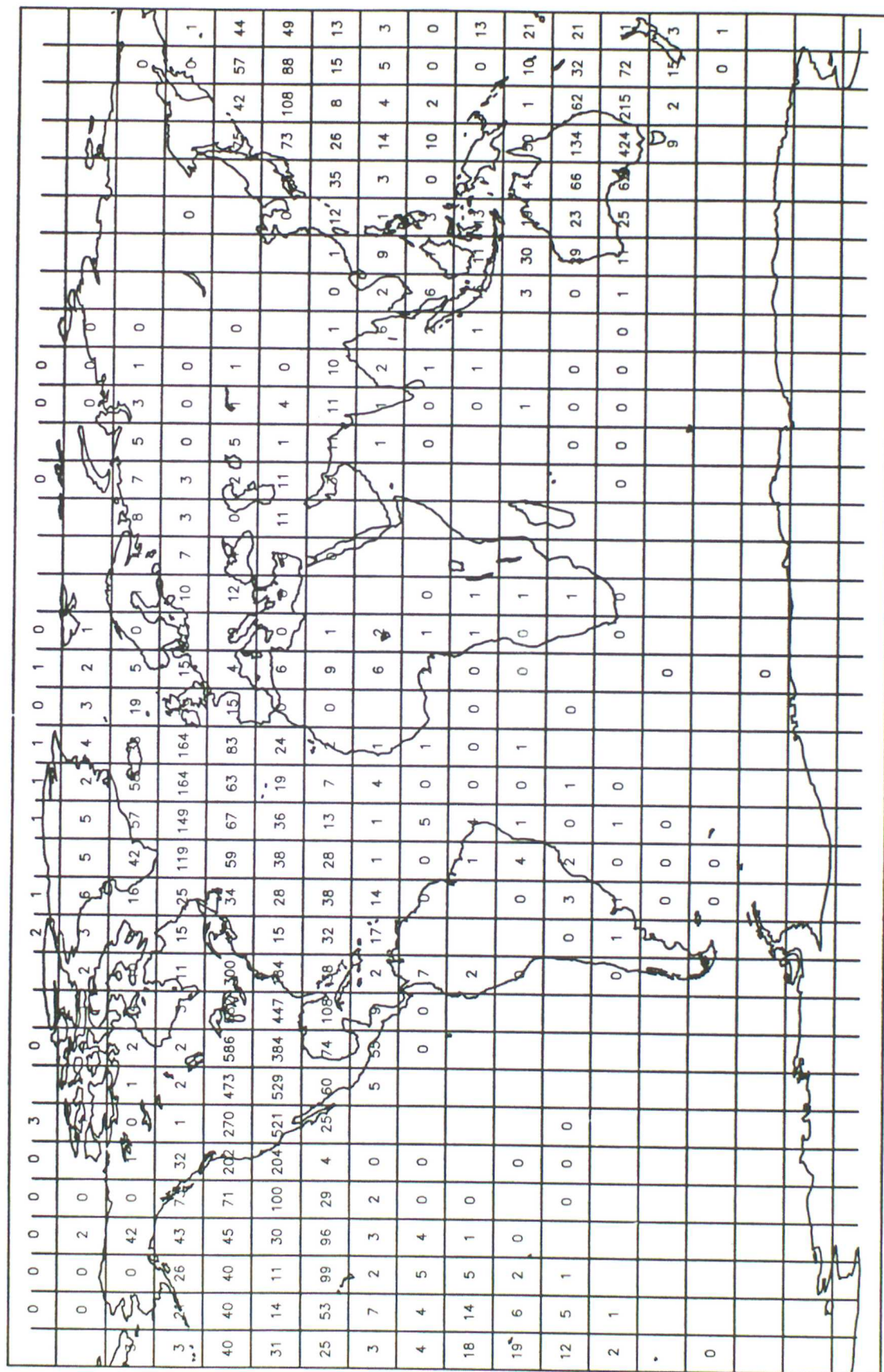
IDENT.	N.REP.	TEMPERATURE				N.REP.	WIND				
		PG	PR	RMS	BIAS		PG	PR	PC	RMS	BIAS
AAA	179	2	14	4.3	-3.0	179	0	11	0	13.7	2.7
AAL	4199	0	2	1.8	0.1	4205	0	2	0	8.6	1.5
AAN	44	0	2	2.1	-0.6	44	0	0	0	8.1	0.7
AAR	1773	0	1	2.0	-0.2	1775	0	2	0	8.6	1.1
ACA	788	0	1	2.0	0.1	797	0	2	1	7.4	0.7
ACI	31	0	6	2.3	0.7	31	0	3	0	10.9	3.9
AEA	118	8	16	3.8	1.2	115	1	5	0	11.4	2.5
AEL	204	1	4	1.8	-0.4	208	0	2	0	9.9	1.3
AFL	95	0	100	3.3	1.9	97	0	100	0	12.1	0.8
AFR	1233	1	5	2.0	0.0	1248	0	5	0	8.2	1.1
AIC	34	0	3	3.2	1.1	35	0	6	0	8.6	2.7
AJJ	83	1	2	2.5	0.0	85	0	4	0	12.0	5.1
AMT	359	0	0	1.5	0.2	363	0	2	0	8.9	2.5
AMX	316	4	100	2.8	-0.3	319	1	3	0	9.4	0.4
ANA	852	1	2	2.1	-0.7	850	0	2	0	8.7	1.2
ANZ	3235	1	3	2.2	-0.1	3212	0	3	1	8.3	1.2
AOM	578	1	2	1.8	0.7	580	0	4	1	10.2	1.3
ARG	29	3	3	2.2	0.6	28	0	4	0	11.3	1.3
ARP	45	0	0	1.8	1.1	45	0	2	0	9.3	2.6
ATN	25	4	20	3.7	-2.3	26	0	100	0	13.1	-3.4
AUA	51	0	0	2.4	-1.3	53	0	6	0	9.7	2.7
AVA	335	0	2	1.8	0.0	335	0	3	0	9.8	1.2
AVN	45	2	0	1.9	0.4	45	0	0	0	7.0	0.9
AZA	473	0	2	2.1	0.7	480	0	4	0	9.5	0.9
BAL	167	0	15	1.8	-0.2	169	0	15	0	9.6	3.0
BAW	1383	0	4	2.1	-0.2	1390	0	5	1	9.5	1.7
BBB	30	0	13	1.5	-0.2	32	0	13	0	6.6	2.0
BWA	372	1	2	1.5	0.3	375	0	3	0	10.3	1.8
CAL	1836	1	1	1.9	-0.3	1836	0	2	0	8.9	1.2
CCA	284	3	11	3.1	0.2	285	0	7	0	10.6	1.0
CDN	2239	1	3	2.0	0.4	2250	0	3	0	8.1	0.9
CES	190	1	3	2.1	0.4	192	0	3	1	9.7	1.6
CFG	971	1	2	2.0	-0.6	969	0	2	0	8.6	1.7
CHI	20	15	20	4.1	1.5	26	0	0	0	6.4	0.0
CKS	108	6	11	2.8	0.0	110	0	99	0	11.7	1.8
CKT	47	0	6	1.9	0.0	46	0	11	0	10.6	1.9
CLX	65	0	0	2.3	-0.8	67	0	1	0	7.6	1.2
CMI	1162	2	3	2.1	0.5	1176	0	3	1	8.7	1.5
CMM	166	1	4	2.1	-0.1	167	1	4	0	8.8	1.8
COA	822	0	2	1.7	0.5	830	0	2	0	8.7	1.7
CPA	56	2	4	1.8	-0.2	55	0	5	4	9.7	1.5
CRL	129	2	8	2.2	-0.7	130	1	6	0	9.3	1.7
CTM	46	0	13	2.8	-0.9	45	0	9	0	8.4	1.5
CUB	169	1	5	2.4	1.1	167	0	8	1	9.8	1.1
DAL	5308	0	2	2.1	0.6	5169	0	2	0	8.8	1.2
DHL	299	1	100	3.7	-2.1	301	1	100	0	12.2	1.2
DLH	2484	0	6	2.0	0.2	2516	0	9	2	8.6	1.0
DOA	192	2	14	4.1	2.8	195	1	10	0	10.0	1.3
EIA	69	0	0	2.0	-0.1	70	0	100	0	10.0	2.2
ELY	134	0	10	1.9	0.0	139	0	11	0	10.0	0.5
EVA	1209	1	2	2.0	-0.6	1207	0	2	0	8.4	0.9
EWV	31	10	10	2.9	0.7	31	0	3	0	10.9	-1.6
FDX	870	1	2	2.1	0.4	878	0	2	0	8.3	1.1
FIN	355	1	5	2.0	0.3	354	0	4	1	8.8	1.0
FJI	396	2	4	1.9	0.8	398	0	4	1	8.1	1.4
FKC	24	0	4	2.4	0.4	24	0	4	0	9.1	0.3
FKO	27	0	0	2.2	0.5	29	0	7	0	12.5	1.8
FMN	20	0	0	1.7	0.6	20	0	0	0	12.6	7.1
GAF	96	2	4	1.9	0.4	97	0	1	0	7.7	0.5

IDENT.	N.REP.	TEMPERATURE				BIAS	N.REP.	WIND				BIAS
		PG	PR	RMS	PG			PR	PC	RMS		
GFA	40	0	8	2.8	0.6		40	0	10	0	10.1	0.9
GHA	36	0	0	1.2	0.0		36	0	0	0	7.6	1.6
GIA	293	1	3	2.0	0.3		285	0	3	0	9.3	2.1
HAL	1129	0	1	1.5	0.0		1133	0	2	1	8.1	1.6
HLF	148	2	3	1.8	-0.9		148	1	3	0	9.6	0.2
HRH	26	4	8	2.3	1.2		25	0	4	0	9.2	2.8
IBE	1677	1	14	1.8	0.3		1663	0	15	0	10.2	1.0
ICE	443	0	2	2.2	0.3		443	0	1	1	7.8	0.7
JAA	60	0	0	1.5	0.7		58	0	0	0	6.7	2.5
JAL	5927	0	1	1.9	0.1		5928	0	2	0	8.7	1.3
JAZ	20	0	0	1.5	0.9		20	0	0	0	6.1	1.1
KAL	3690	1	2	2.2	0.0		3692	0	2	0	9.1	1.0
KIW	28	4	7	2.2	1.9		28	0	4	0	9.2	0.1
KLM	2112	0	2	1.9	0.3		2111	0	3	0	9.0	1.4
LDA	215	1	7	2.1	-1.0		219	0	9	0	9.5	1.3
LDI	140	1	4	2.2	-1.1		140	0	4	0	8.8	1.2
LIB	124	0	2	1.3	-0.1		125	0	2	0	7.8	1.3
LOT	465	0	2	2.2	0.4		467	0	2	0	7.7	0.5
LTU	716	1	3	1.9	0.3		701	1	4	0	9.6	1.4
LWD	142	1	1	1.7	0.5		144	0	3	0	9.4	2.7
MAS	350	0	2	2.1	-0.6		350	0	5	0	10.8	0.8
MDA	97	1	1	2.6	1.5		97	0	1	1	7.4	0.6
MKD	89	0	2	1.9	0.3		92	0	1	0	9.9	0.4
MOD	38	11	16	2.2	0.7		38	0	21	0	12.1	2.2
MPH	541	0	3	1.8	0.0		542	0	3	0	9.6	1.8
MRS	49	67	57	8.7	-8.0		49	0	12	0	13.1	6.8
NAT	27	0	0	1.3	0.3		28	0	0	0	7.5	-1.7
NCA	692	1	2	1.9	0.6		692	0	3	0	8.8	1.1
NGA	65	0	0	1.6	0.3		64	0	100	0	14.8	2.1
NWA	9154	0	2	2.1	0.6		9154	0	3	1	9.1	1.2
OAL	32	0	6	2.3	0.4		33	0	6	0	11.2	4.1
PAC	81	11	10	2.9	0.7		85	0	1	0	8.8	2.3
PAL	945	1	1	1.8	-0.1		950	0	90	1	9.7	1.7
PAO	213	3	6	2.1	0.2		206	0	3	0	7.8	1.0
PIA	20	5	10	3.2	-0.2		20	0	5	0	12.5	2.4
PNL	69	0	3	2.7	1.4		68	1	1	0	9.5	-0.1
QFA	2066	2	3	1.9	0.0		2043	0	2	0	7.9	1.3
RAF	209	0	2	1.7	0.3		207	0	6	2	9.7	2.3
RIA	28	21	18	2.3	1.5		28	0	7	0	9.8	3.5
RJA	41	0	0	2.6	1.5		41	0	2	0	7.4	2.0
RKA	21	5	5	2.3	0.5		20	0	0	0	8.5	2.0
RON	41	0	0	1.8	0.8		41	0	5	5	8.8	1.2
ROT	22	0	0	2.5	-1.4		22	0	0	0	6.6	0.8
RRR	166	0	19	2.1	0.3		165	0	100	1	10.2	1.2
SAA	229	0	1	1.8	-0.9		225	0	3	0	8.4	1.2
SAB	74	1	3	1.8	-0.6		78	0	1	0	8.1	1.0
SAS	1254	0	1	1.9	-0.1		1254	0	3	1	8.0	0.6
SIA	1385	1	2	1.9	-0.6		1384	0	3	0	10.0	1.4
SOL	54	4	4	1.3	0.5		53	0	2	0	7.9	1.1
SPP	289	1	8	2.0	0.0		283	0	7	0	9.6	1.6
SVA	86	0	3	2.0	0.1		93	0	8	1	9.7	0.4
SWR	227	0	2	2.0	0.3		232	0	2	0	9.8	1.6
TAP	447	0	3	2.0	0.0		445	0	3	0	9.4	1.6
TEJ	39	0	21	1.9	0.5		38	0	26	0	10.8	1.1
THA	362	1	2	2.1	-0.8		361	0	3	0	10.5	1.0
TIH	59	2	0	1.8	0.6		60	0	2	2	12.0	3.7
TOW	52	2	2	2.5	0.5		53	0	100	0	11.7	2.4
TWA	1274	1	3	2.1	0.4		1275	0	3	0	9.5	1.0
UAL	73698	1	3	1.6	0.1		73707	0	3	0	7.7	0.9

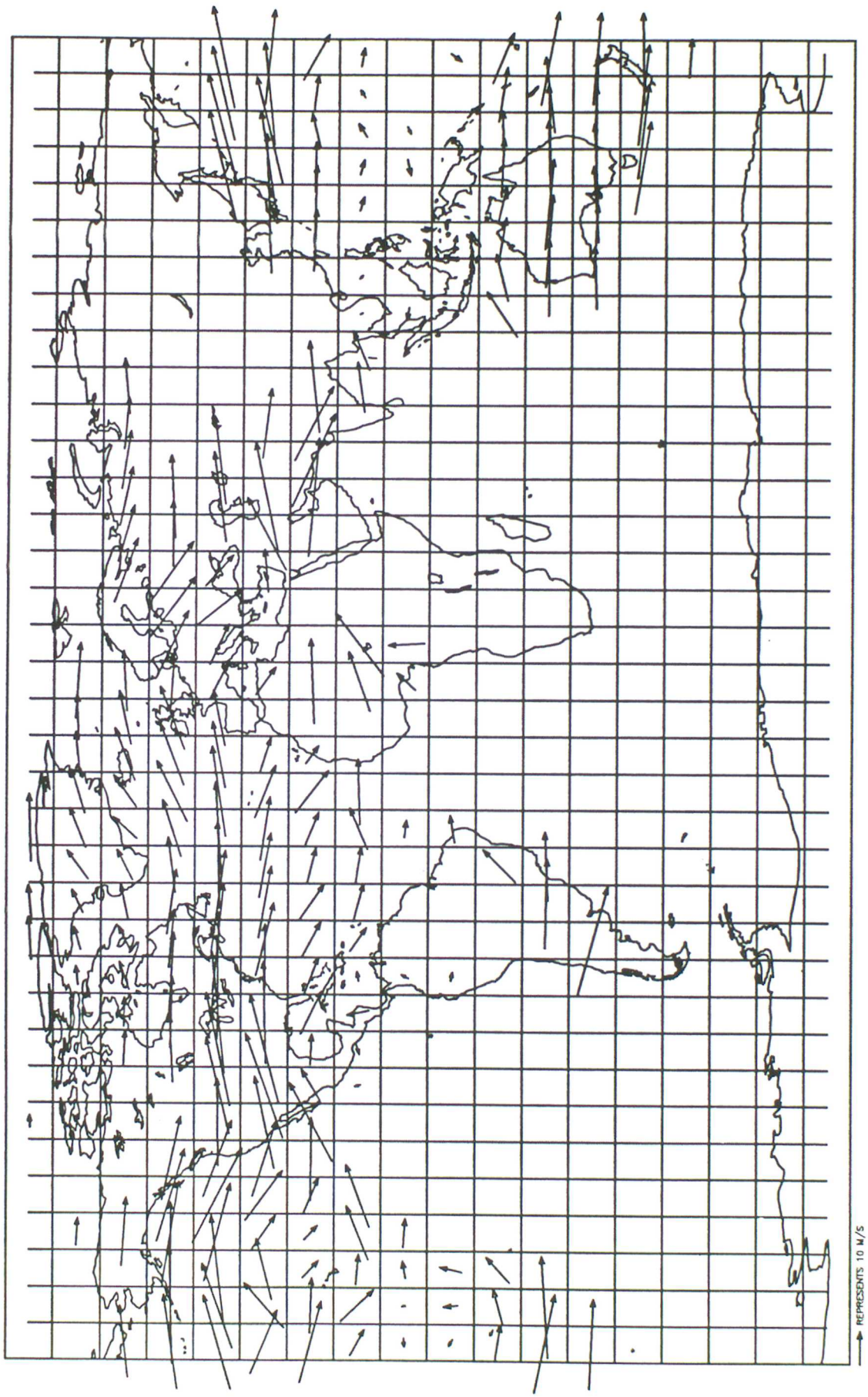
IDENT.	N.REP.	TEMPERATURE				N.REP.	PG	WIND			BIAS
		PG	PR	RMS	BIAS			PR	PC	RMS	
ULE	88	1	2	1.9	-0.2	89	0	4	0	9.5	1.3
UPS	782	1	8	1.9	-0.3	787	0	9	0	9.3	1.7
USA	165	1	4	2.1	-0.5	170	0	5	0	9.7	1.9
USF	74	1	8	1.4	0.1	74	0	9	0	7.3	1.7
VIA	485	0	2	1.8	0.8	487	0	5	0	9.7	1.3
VIR	148	1	5	1.9	-0.4	145	0	6	0	11.6	2.5
VRG	38	5	3	1.9	1.0	38	0	3	0	10.4	1.3
VSP	113	3	5	2.1	0.5	114	1	4	0	9.7	0.4
WOA	34	0	6	2.1	1.1	35	0	3	0	10.3	-1.1
AN	24845	0	2	1.6	0.1	24564	0	1	0	7.0	1.2
BA	15174	0	11	1.7	0.6	15165	0	11	0	7.8	1.5
DL	1042	2	100	3.4	0.2	1042	52	100	0	44.4	-4.4
KL	4198	1	46	2.0	1.1	4196	0	19	0	7.3	1.5
LH	1244	0	0	1.4	0.3	1244	0	98	0	6.8	1.9
NW	49475	0	1	1.7	0.1	49475	0	1	0	7.4	1.2
QF	11255	0	1	1.4	0.4	11237	0	1	0	6.7	1.2
M	275	2	8	3.5	1.5	285	0	6	0	11.4	2.6
N	455	2	4	2.3	0.7	466	0	4	1	9.2	1.1

FIGURE 3

OBSERVATIONS WITH O-B VECTOR DIFFERENCE GREATER THAN 60 MPS EXCLUDED



AIRCRAFT MEAN WINDS BETWEEN 70 AND 500 HPA
NOVEMBER 1994
FIGURE 4
OBSERVATIONS WITH O-B VECTOR DIFFERENCE GREATER THAN 60 MPS EXCLUDED
VALUES ARE PRINTED WHERE MORE THAN 30 OBS ARE PRESENT

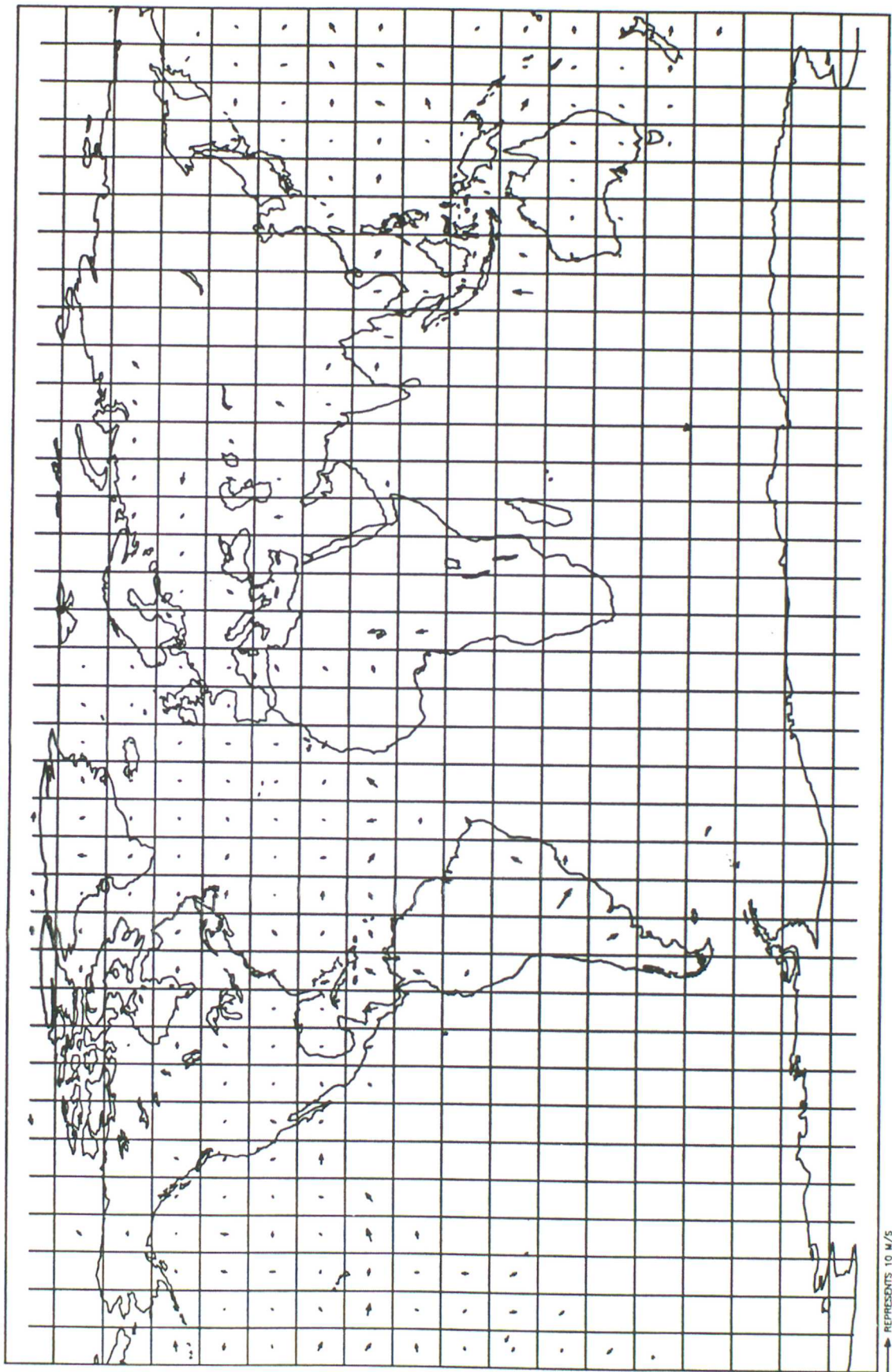


AIRCRAFT MEAN O-B WINDS BETWEEN 70 AND 500 HPA

NOVEMBER 1994

OBSERVATIONS WITH O-B VECTOR DIFFERENCE GREATER THAN 60 MPS EXCLUDED
VALUES ARE PRINTED WHERE MORE THAN 30 OBS ARE PRESENT

FIGURE 5



NOVEMBER 1994

OBSERVATIONS WITH O-B VECTOR DIFFERENCE > 60 MPS EXCLUDED
VALUES ARE PRINTED WHERE > 30 OBS ARE PRESENT

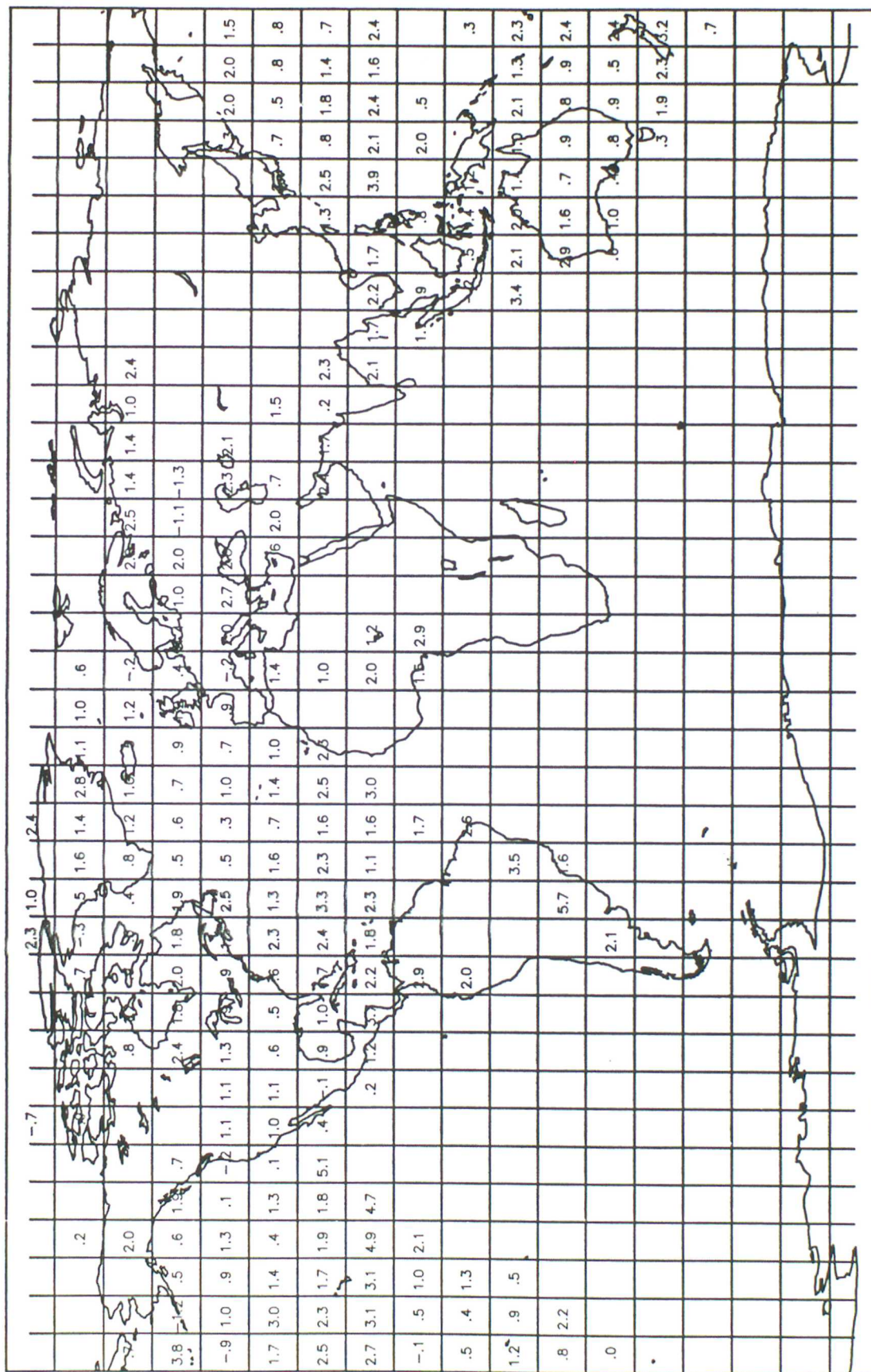


FIGURE 7

NOVEMBER 1994
OBSERVATIONS WITH O-B VECTOR DIFFERENCE GREATER THAN 60 MPS EXCLUDED

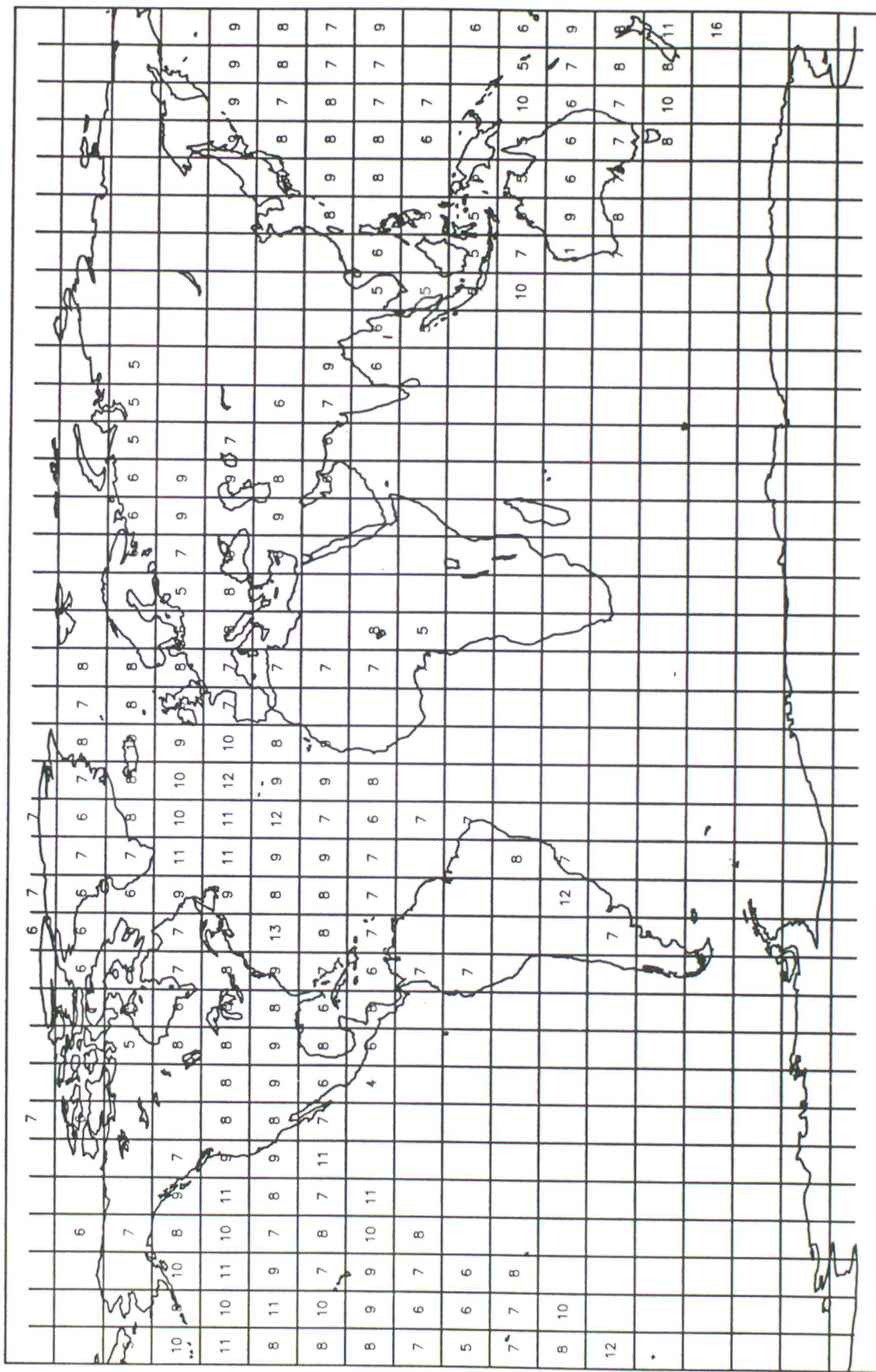


TABLE 5

MONTHLY MONITORING OF RADIOSONDE OBSERVATIONS
 MONITORING CENTRE: BRACKNELL
 MONTH: November, 94

Monitoring procedures

Period	:One calendar month.
Data monitored	:Reports from each unique identifier for radiosonde TEMPs.
Area monitored	:90°N - 90°S, 180°W - 180°E.
Standard of comparison	:Background field from Bracknell global model.
Observation times	:00 UTC and 12 UTC.
Level(s) monitored	:Standard levels between 1000.0 - 30.0 hPa
Element monitored	:GEOPOTENTIAL HEIGHT IN metres
Parameters monitored	
:NUM OBS	:Number of observations available at level shown during period.
:NUM GROSS	:Number of gross errors at level shown during period.
:% REJ	:Percentage of observations rejected by quality control at level shown during period.
:SD	:SD of difference of observations from background values at level shown excluding those with gross errors.
:BIAS	:Mean difference of observations from background values at level shown excluding those with gross errors.
:RMS	:Root Mean Square difference of observations from background values at level shown excluding those with gross errors.
:NUM LEVELS	:Number of levels satisfying selection criteria.
GROSS ERROR LIMITS	:Defined in Appendix I.1
SELECTION CRITERIA	: ≥ 3 levels with ≥ 10 observations and ≥ 100 m weighted RMS.
ONLY THE WORST LEVEL IS SHOWN WITH UNWEIGHTED RMS	

WMO IDENT	OBS TIME	ELM	LEV	LAT/LONG		NUM OBS	NUM GROSS	SD	BIAS	RMS	NUM LEVELS
27944	12	Z	70	53/	41	22	0	56.3	112.7	126.0	6
41594	00	Z	200	32/	73	12	1	116.4	-12.6	117.1	8
42027	12	Z	150	34/	75	16	1	110.3	66.0	128.5	5
42182	12	Z	70	29/	77	18	0	135.7	44.9	142.9	7
42314	00	Z	100	27/	95	10	0	142.5	-99.6	173.8	9
42314	12	Z	70	27/	95	10	0	173.0	-76.3	189.1	8
42339	00	Z	200	26/	73	18	1	85.2	64.3	106.8	5
42339	12	Z	100	26/	73	9	2	146.7	96.1	175.4	6
42361	00	Z	70	26/	78	10	2	143.2	130.6	193.8	9
42361	12	Z	200	26/	78	17	0	122.4	-43.0	129.7	8
42369	00	Z	50	27/	81	15	1	199.1	108.7	226.8	9
42369	12	Z	100	27/	81	19	0	155.4	-7.7	155.5	9
42379	00	Z	200	27/	83	16	0	128.6	7.8	128.9	9
42379	12	Z	50	27/	83	10	0	173.8	66.6	186.1	10
42397	00	Z	300	27/	88	10	0	47.1	-85.1	97.3	5
42410	00	Z	50	26/	92	18	1	159.8	90.7	183.7	7
42410	12	Z	50	26/	92	20	0	161.0	-76.8	178.4	5
42492	00	Z	150	26/	85	16	0	133.2	-25.9	135.7	4
42647	00	Z	150	23/	73	16	0	66.7	-84.9	108.0	5
42647	12	Z	150	23/	73	17	0	135.7	86.4	160.9	7
42701	00	Z	150	23/	85	12	0	128.6	-14.6	129.4	4
42809	00	Z	30	23/	88	10	0	130.2	167.1	211.8	5
42875	00	Z	200	21/	82	16	0	97.6	4.8	97.7	6
42875	12	Z	200	21/	82	15	1	90.3	-3.3	90.4	5
42971	00	Z	30	20/	86	16	1	206.0	143.6	251.1	9
43003	00	Z	100	19/	73	14	0	121.8	2.0	121.8	4
43003	12	Z	100	19/	73	13	1	119.4	46.6	128.2	5
43014	00	Z	200	20/	75	17	0	80.4	14.5	81.7	6
43014	12	Z	150	20/	75	22	1	115.9	44.2	124.0	5
43041	00	Z	50	19/	82	12	0	223.8	-8.8	224.0	10
43128	00	Z	50	17/	78	13	0	207.1	-43.8	211.6	7
43128	12	Z	50	17/	78	16	0	179.2	62.6	189.9	8
43185	00	Z	150	16/	81	11	1	108.9	47.6	118.9	4
43185	12	Z	150	16/	81	9	1	127.9	46.2	136.0	6
43192	00	Z	150	15/	74	23	0	102.1	-87.6	134.5	7
43192	12	Z	70	15/	74	12	0	147.6	31.5	150.9	4
43285	00	Z	50	13/	75	13	2	218.2	8.0	218.4	8
43285	12	Z	30	13/	75	9	3	145.5	172.8	225.9	8
43295	00	Z	70	13/	78	13	0	148.4	107.9	183.5	4
43295	12	Z	70	13/	78	10	0	97.6	198.9	221.6	5
43346	12	Z	100	11/	80	15	0	162.8	-5.7	162.9	5
43353	12	Z	100	10/	76	13	1	152.8	13.9	153.4	6
43369	00	Z	70	8/	73	17	3	133.2	-97.6	165.1	5
43371	00	Z	70	8/	77	16	3	157.1	-139.9	210.4	10
43371	12	Z	70	8/	77	21	1	160.8	26.0	162.9	6
54135	00	Z	30	44/	122	18	0	153.3	134.1	203.6	4
56739	12	Z	100	25/	98	29	0	50.6	107.8	119.1	4
57957	12	Z	70	25/	110	26	0	43.7	140.5	147.2	4
58847	00	Z	100	26/	119	24	0	44.2	128.8	136.2	5
59981	00	Z	100	17/	112	24	0	28.5	133.7	136.7	4
62306	12	Z	30	31/	27	2	10	27.0	419.0	419.9	9
82332	12	Z	30	-3/	-60	15	0	52.7	211.4	217.9	6
83612	12	Z	30	-20/	-55	14	0	52.2	183.9	191.2	7
89009	00	Z	30	-90/	0	17	1	140.9	205.2	249.0	6
91557	12	Z	700	-18/	168	14	3	16.0	-71.6	73.4	7
96163	00	Z	150	-1/	100	23	1	88.6	91.4	127.3	7
96237	00	Z	100	-2/	106	27	0	137.7	32.8	141.5	5

AVAILABILITY - TEMP - 500 HPA GEOPOTENTIAL - NOVEMBER 1994
ALL HOURS
10 DEGREE BOX AVERAGE NUMBER OF OBSERVATIONS IN 24 HOURS
TOTAL AVERAGE NUMBER OF OBSERVATIONS IN 24 HOURS - 1374

FIGURE 8

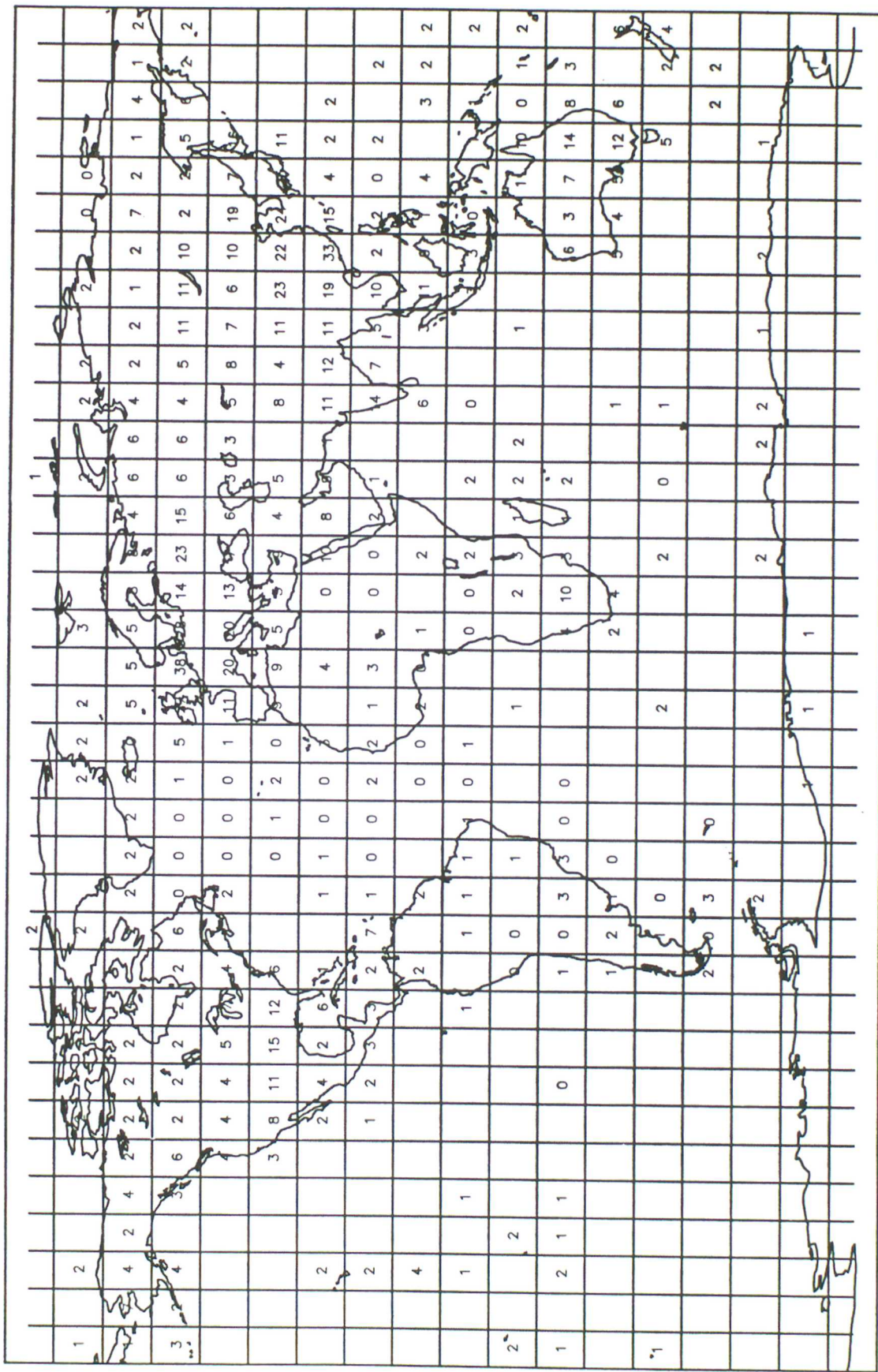


TABLE 6

MONTHLY MONITORING OF RADIOSONDE OBSERVATIONS
 MONITORING CENTRE: BRACKNELL
 MONTH: November, 94

Monitoring procedures

Period	:One calendar month.
Data monitored	:Reports from each unique identifier for radiosonde TEMPs.
Area monitored	:90°N - 90°S, 180°W - 180°E.
Standard of comparison	:Background field from Bracknell global model.
Observation times	:00 UTC and 12 UTC.
Level(s) monitored	:Standard levels between 1000.0 - 100.0 hPa
Element monitored	:VECTOR WIND in m s^{-1}
Parameters monitored	:NUM OBS :Number of observations available at level shown during period. :NUM GROSS :Number of gross errors at level shown during period. :% REJ :Percentage of observations rejected by quality control at level shown during period. :UBIAS,VBIAS:Mean difference of observations of U and V components from background values at level shown excluding those with gross errors. :RMS :Root Mean Square difference of observations from background values at level shown excluding those with gross errors. :NUM LEVELS :Number of levels satisfying selection criteria.
GROSS ERROR LIMITS	:Defined in Appendix I.2
SELECTION CRITERIA	: ≥ 10 observations and $\geq 15 \text{ m s}^{-1}$ RMS vector wind. ONLY THE STANDARD LEVEL BETWEEN 1000 - 100 hPa WITH HIGHEST RMS IS SHOWN

WMO IDENT	OBS TIME	ELM	LEV	LAT/LONG	NUM OBS	NUM GROSS	% REJ	UBIAS	VBIAS	RMS	LEVELS
37985	00	V	250	39/ 49	15	0	20	-9.5	-5.1	18.3	1
41530	00	V	250	34/ 72	14	0	7	-1.3	1.3	15.4	3
41594	00	V	300	32/ 73	13	0	23	-2.0	1.8	15.2	1
42101	00	V	250	30/ 76	12	0	8	2.1	-3.8	15.5	1
42379	00	V	150	27/ 83	10	0	10	-3.3	-2.4	15.9	1
42867	12	V	200	21/ 79	17	0	17	6.0	11.4	15.6	1
42875	00	V	150	21/ 82	11	0	27	12.8	2.4	17.4	2
43014	00	V	300	20/ 75	17	0	11	7.0	4.1	16.5	1
43014	12	V	150	20/ 75	14	0	14	8.6	-0.2	16.2	1
85442	12	V	200	-23/ -70	26	0	3	12.1	-4.9	16.0	1

AVAILABILITY — TEMP/PILOT — 300 HPA WIND — NOVEMBER 1994
ALL HOURS
10 DEGREE BOX AVERAGE NUMBER OF OBSERVATIONS IN 24 HOURS
TOTAL AVERAGE NUMBER OF OBSERVATIONS IN 24 HOURS — 1225

FIGURE 9

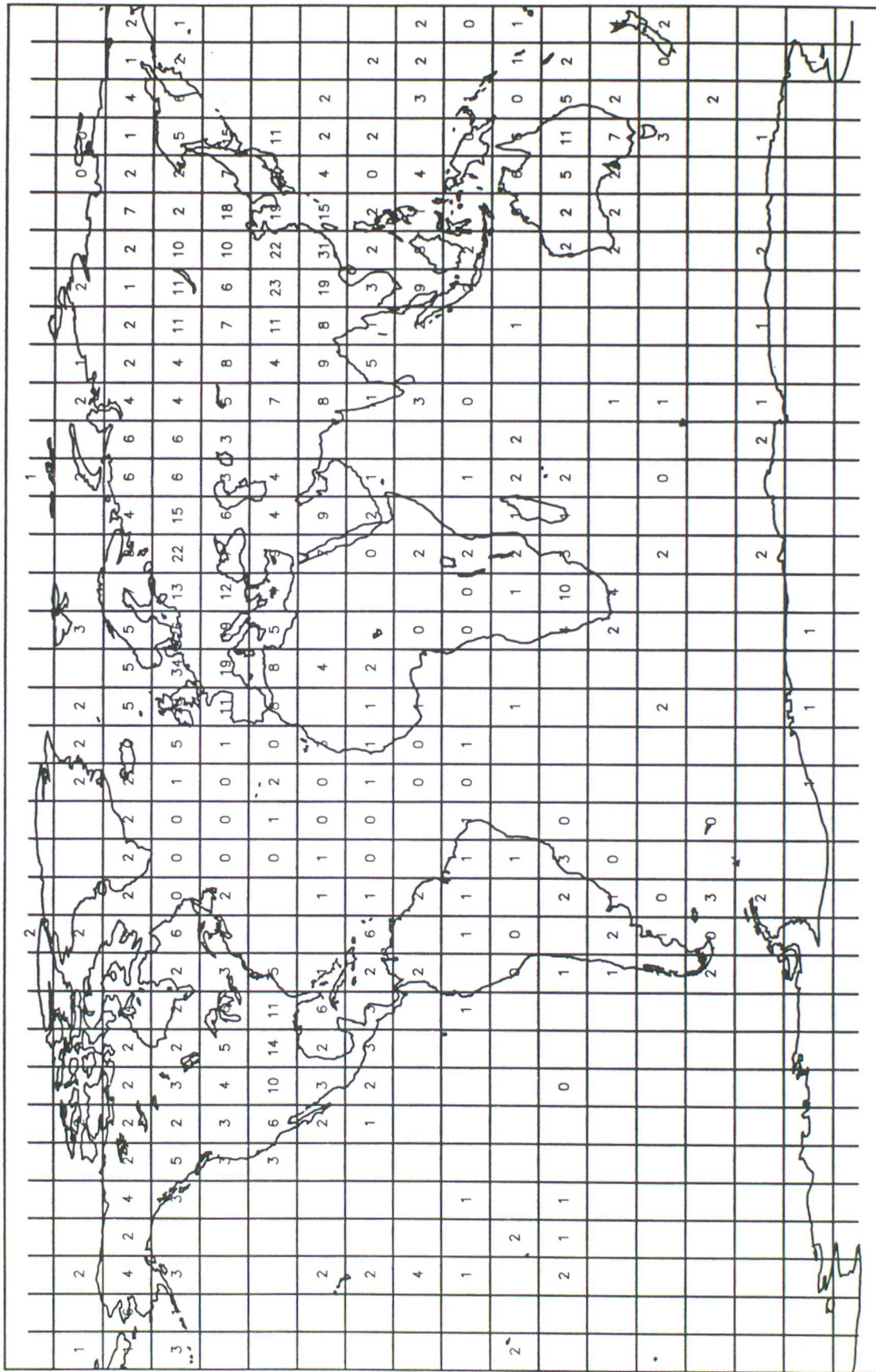


TABLE 7

MONTHLY MONITORING OF RADIOSONDE OBSERVATIONS
 MONITORING CENTRE: BRACKNELL
 MONTH: November, 94

Monitoring procedures

Period : One calendar month.

Data monitored : Reports from each unique identifier for radiosonde TEMPs.

Area monitored : 90°N - 90°S, 180°W - 180°E.

Standard of comparison : Background field from Bracknell global model.

Observation times : 00 UTC and 12 UTC.

Level(s) monitored : Standard levels between 500.0 - 150.0 hPa

Element monitored : WIND DIRECTION in degrees

Parameters monitored

: NUM OBS : Average number of observations at all levels.

: BIAS : Mean difference of observations from background values from all levels.

: MAX SPREAD : (For observation - background values) Maximum absolute difference of SD at any level from SD at all levels

: SD : SD of difference of observations from background values at all levels.

SELECTION CRITERIA

: NUM OBS ≥ 5 , and
 ABSOLUTE BIAS $\geq 10^\circ$, with
 SD $< 30^\circ$, and
 MAX SPREAD $< 10^\circ$

WMO IDENT	OBS TIME	ELM	LAT/LONG	NUM OBS	BIAS	MAX SPREAD	SD
13130	00	DD	46/ 16	22	-11.9	6.5	21.0
13130	12	DD	46/ 16	21	-18.1	5.8	21.2
17030	00	DD	41/ 36	26	18.4	4.2	16.1
17280	00	DD	38/ 40	26	-15.3	7.0	15.5
17280	12	DD	38/ 40	25	-16.0	5.7	13.7
24641	00	DD	64/ 122	24	11.3	8.3	11.3
24641	12	DD	64/ 122	23	10.2	4.6	7.5
31707	12	DD	48/ 131	5	-10.1	3.1	11.0
31873	12	DD	46/ 134	23	18.0	1.0	8.7
33837	00	DD	46/ 31	6	-34.7	4.4	12.7
42339	00	DD	26/ 73	21	12.8	4.0	10.2
42339	12	DD	26/ 73	20	11.4	4.7	13.2
44373	12	DD	44/ 104	9	10.5	8.4	13.4
47158	00	DD	35/ 127	24	12.8	1.9	11.3
48648	00	DD	3/ 102	14	-10.0	7.4	25.2
48657	12	DD	4/ 103	11	-11.5	9.7	27.0
53772	00	DD	38/ 113	28	-10.1	5.8	9.9
58606	00	DD	29/ 116	28	-11.5	2.3	6.3
58606	12	DD	29/ 116	28	-11.9	2.7	6.8
60630	12	DD	27/ 2	24	14.3	7.2	17.9
83746	12	DD	-23/ -43	22	-12.2	6.4	21.7

MONITORING OF SATELLITE WINDS

MONITORING CENTRE: BRACKNELL

MONTH: November, 94

Monitoring procedures

Period : One calendar month.

Data monitored : Reports from GOES, METEOSAT, GMS, INSAT.

Standard of comparison : Background field from Bracknell global model.

Selection Criteria : number of observations > 10.

Data Extracted : Layer: 701 - 1000 hPa
 401 - 700 hPa
 101 - 400 hPa

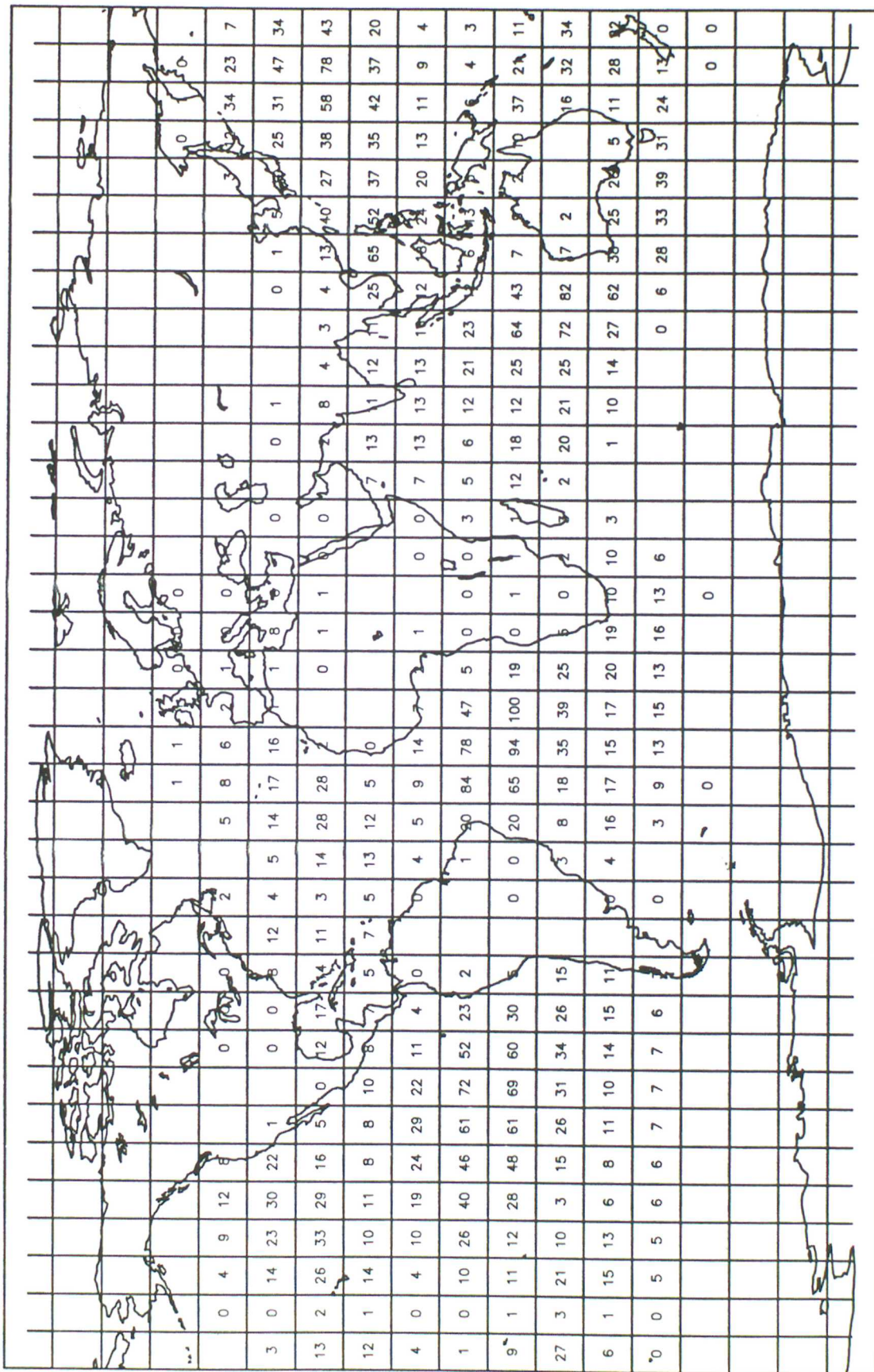
: Mean wind

: Mean observation minus background vector wind differences

: Mean observation minus background speed differences

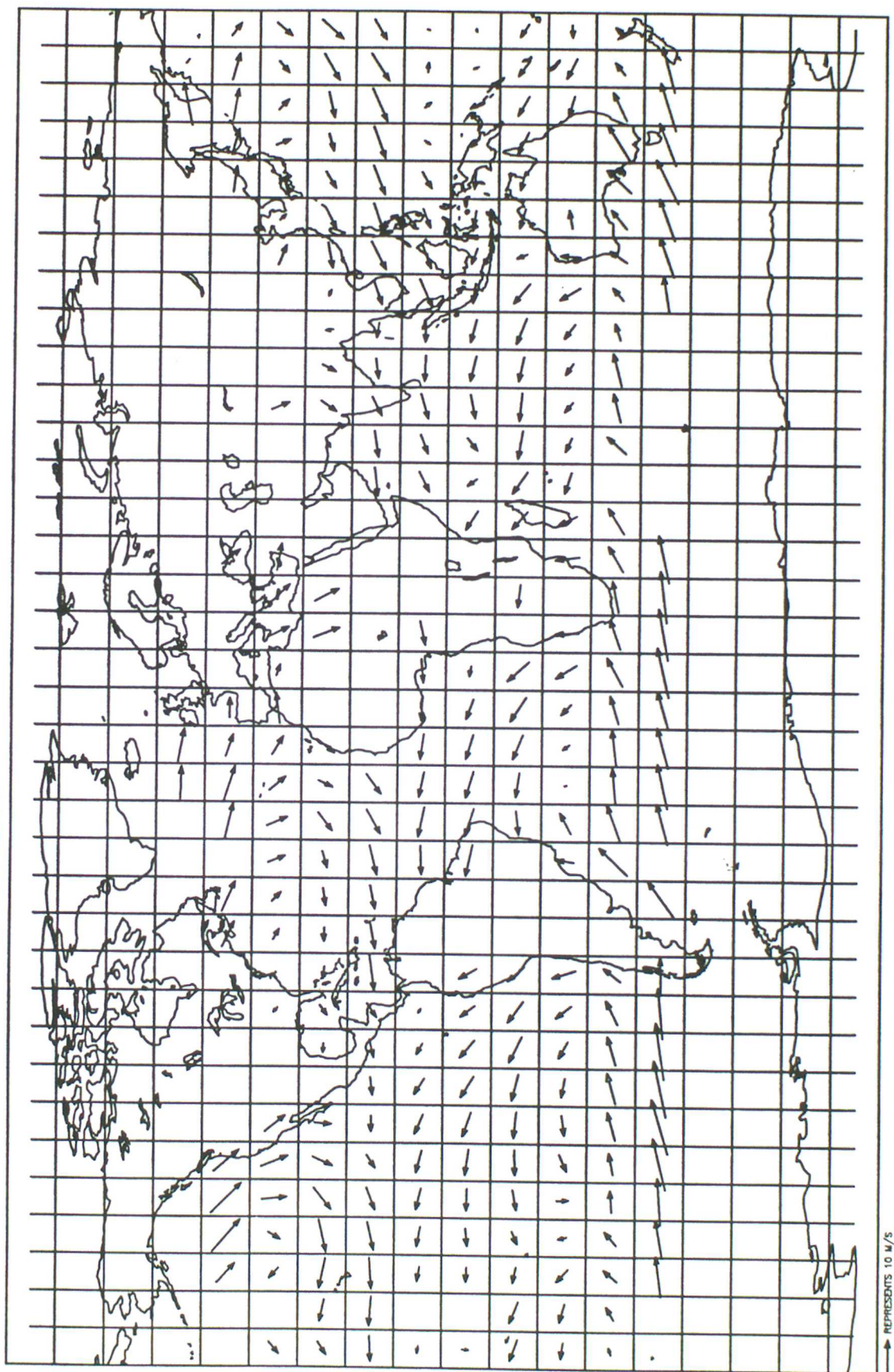
: RMS of observation minus background vector differences

AVERAGE DAILY NUMBER OF SATOB OBSERVATIONS BETWEEN 701 AND 1000 HPA FIGURE 10
NOVEMBER 1994



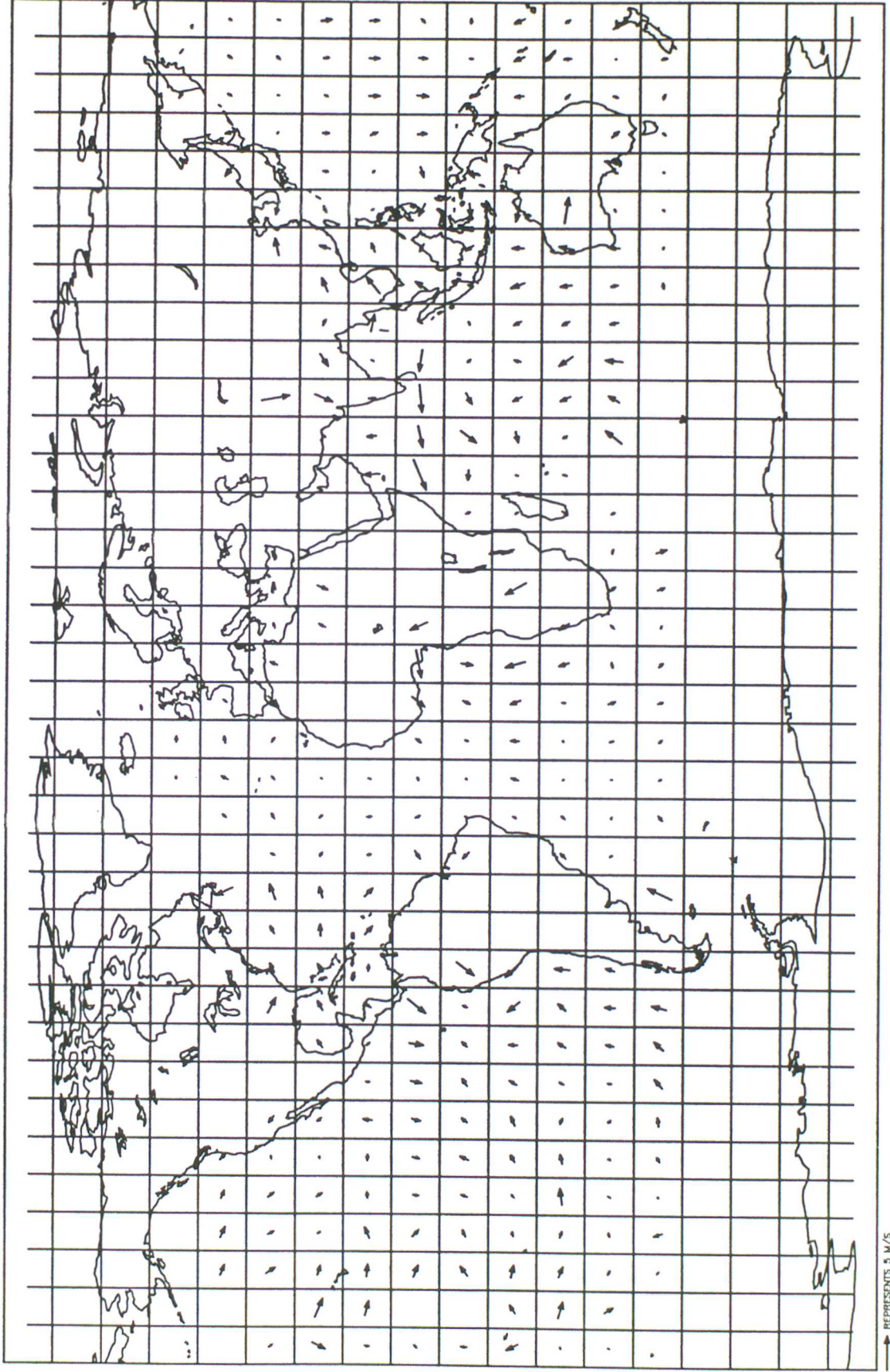
SATOB VECTOR MEAN WINDS BETWEEN 701-1000 HPA
NOVEMBER 1994
ALL OBSERVATIONS
ARROWS PLOTTED WHERE MORE THAN 10 OBS ARE PRESENT

FIGURE 11

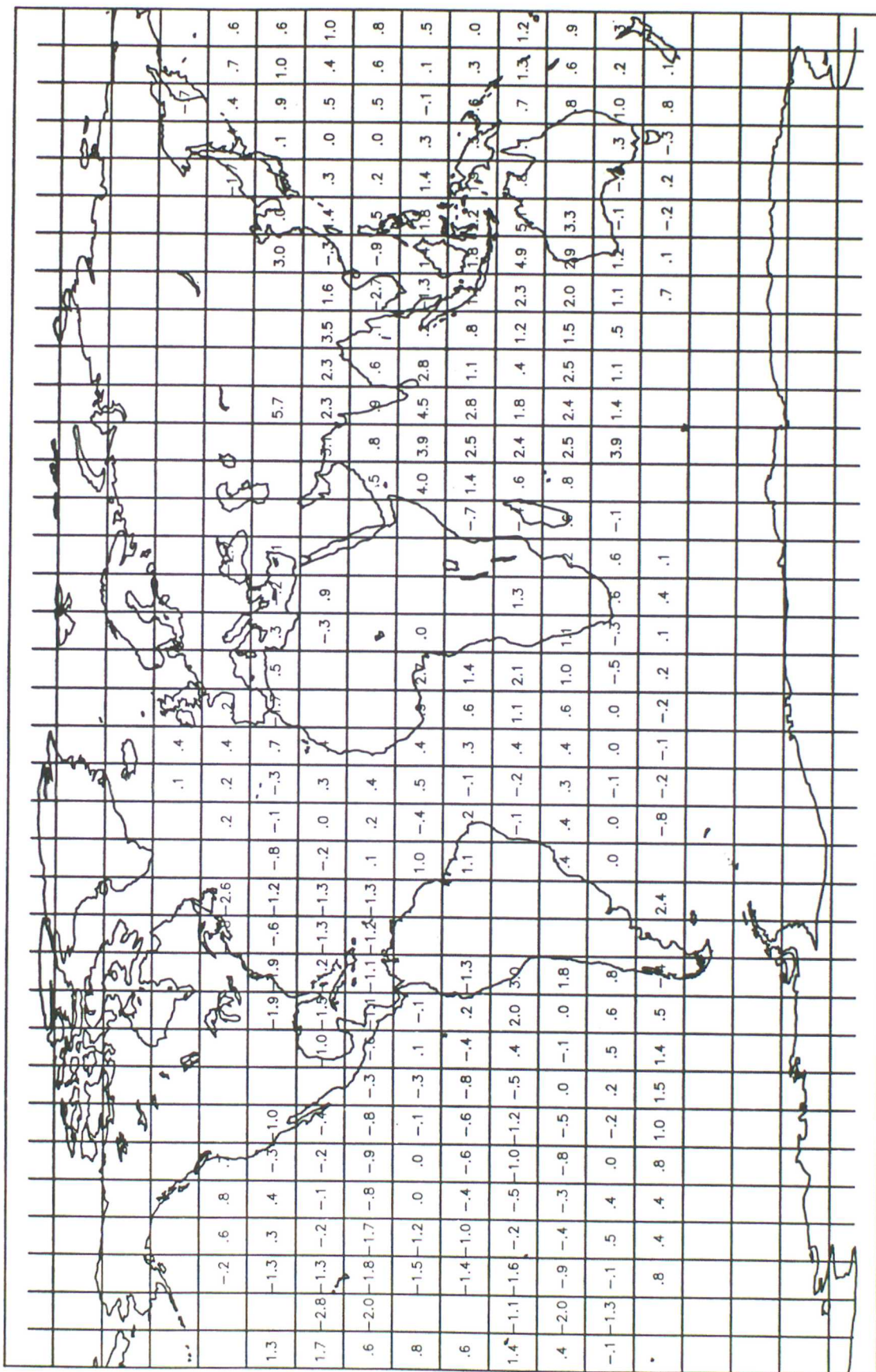


SATOB O-B VECTOR WIND DIFFERENCES BETWEEN 701-1000 HPA
NOVEMBER 1994
ALL OBSERVATIONS
ARROWS PLOTTED WHERE MORE THAN 10 OBS ARE PRESENT

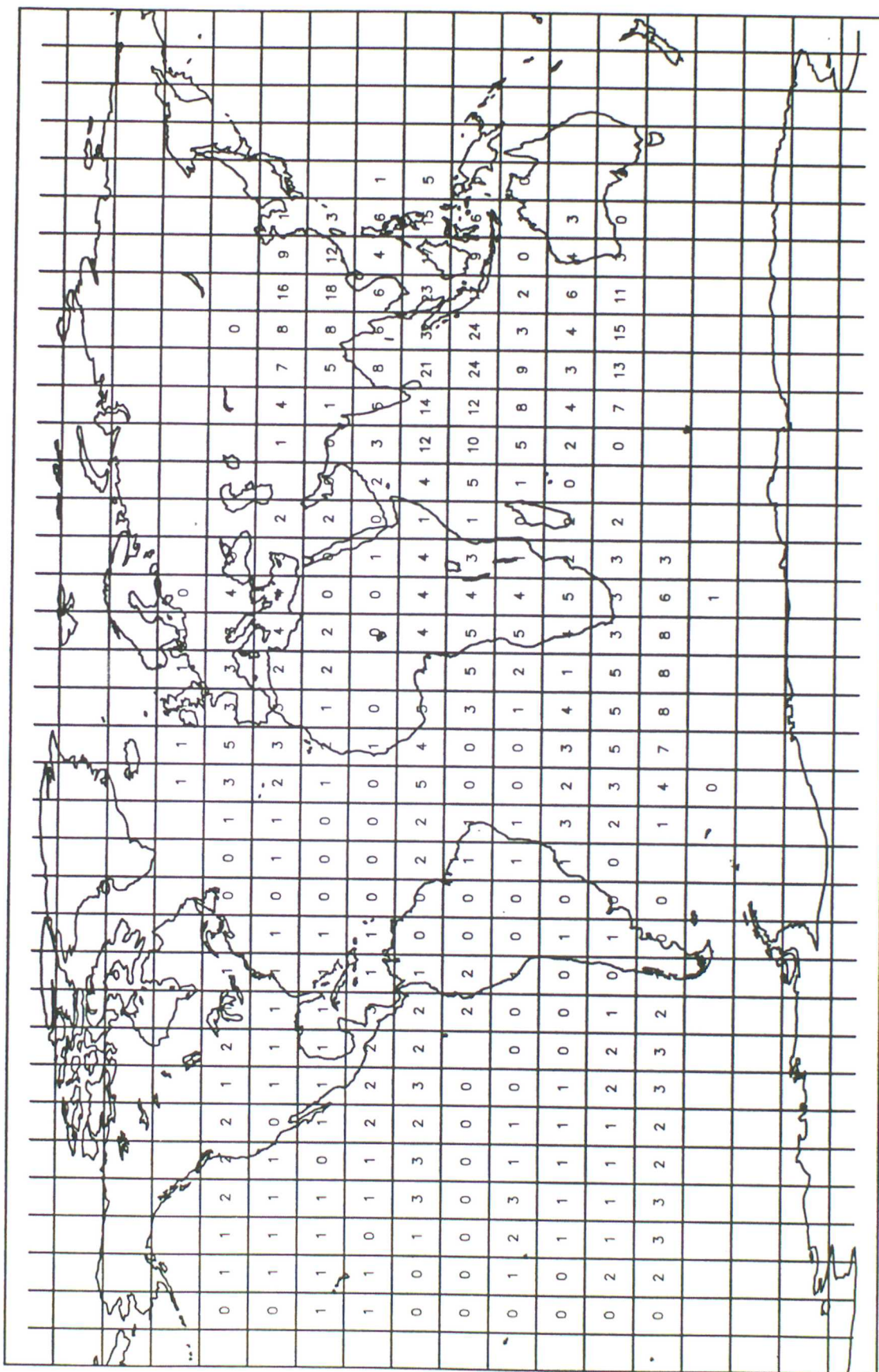
FIGURE 12



SATOB5 : MEAN O-B SPEED DIFFERENCES (M/S) BETWEEN 701 AND 1000 HPA
NOVEMBER 1994
USING ALL OBSERVATIONS
VALUES ARE PRINTED WHERE MORE THAN 10 OBS ARE PRESENT

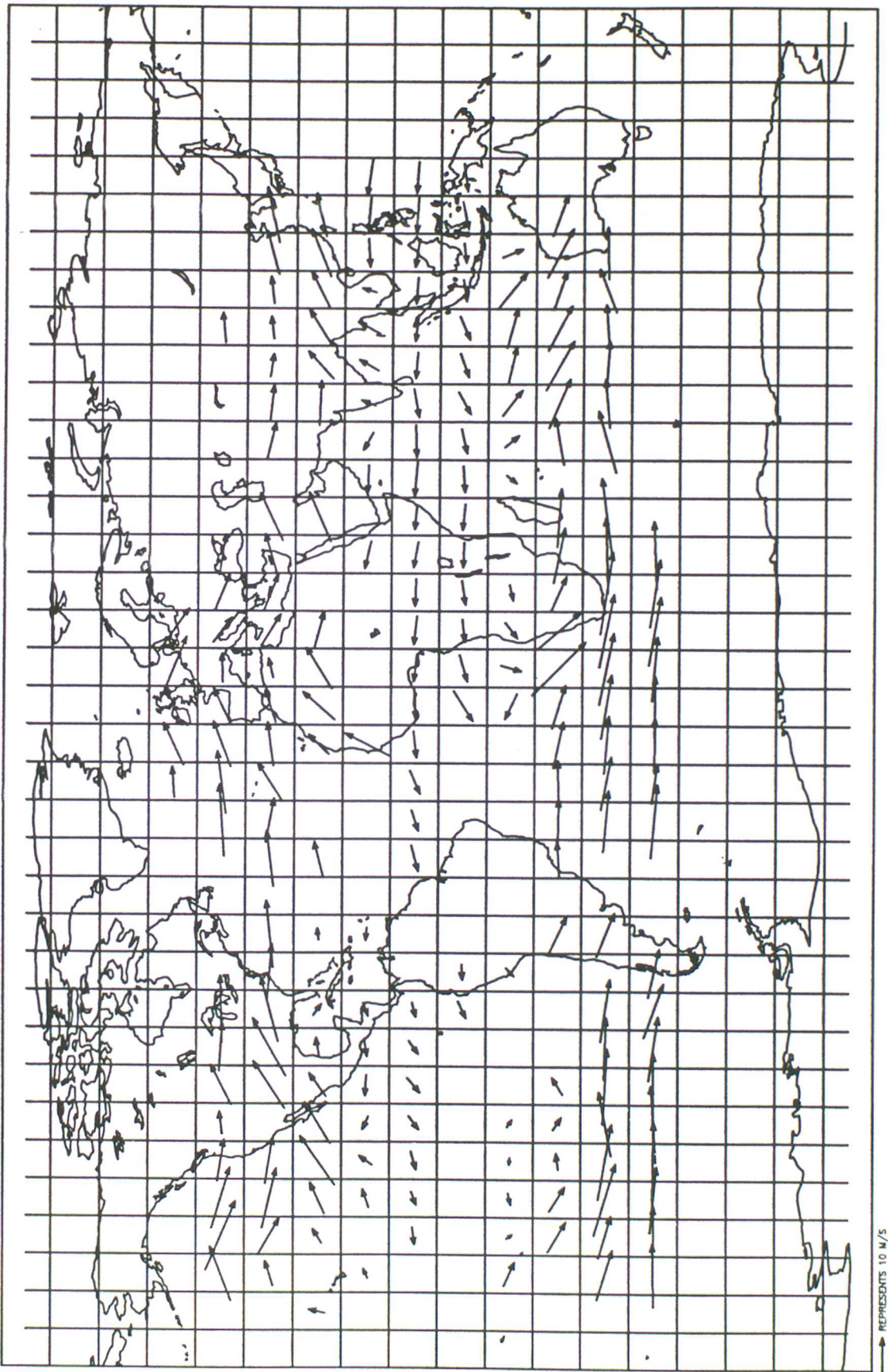


AVERAGE DAILY NUMBER OF SATOB OBSERVATIONS BETWEEN 401 AND 700 HPA FIGURE 15
NOVEMBER 1994



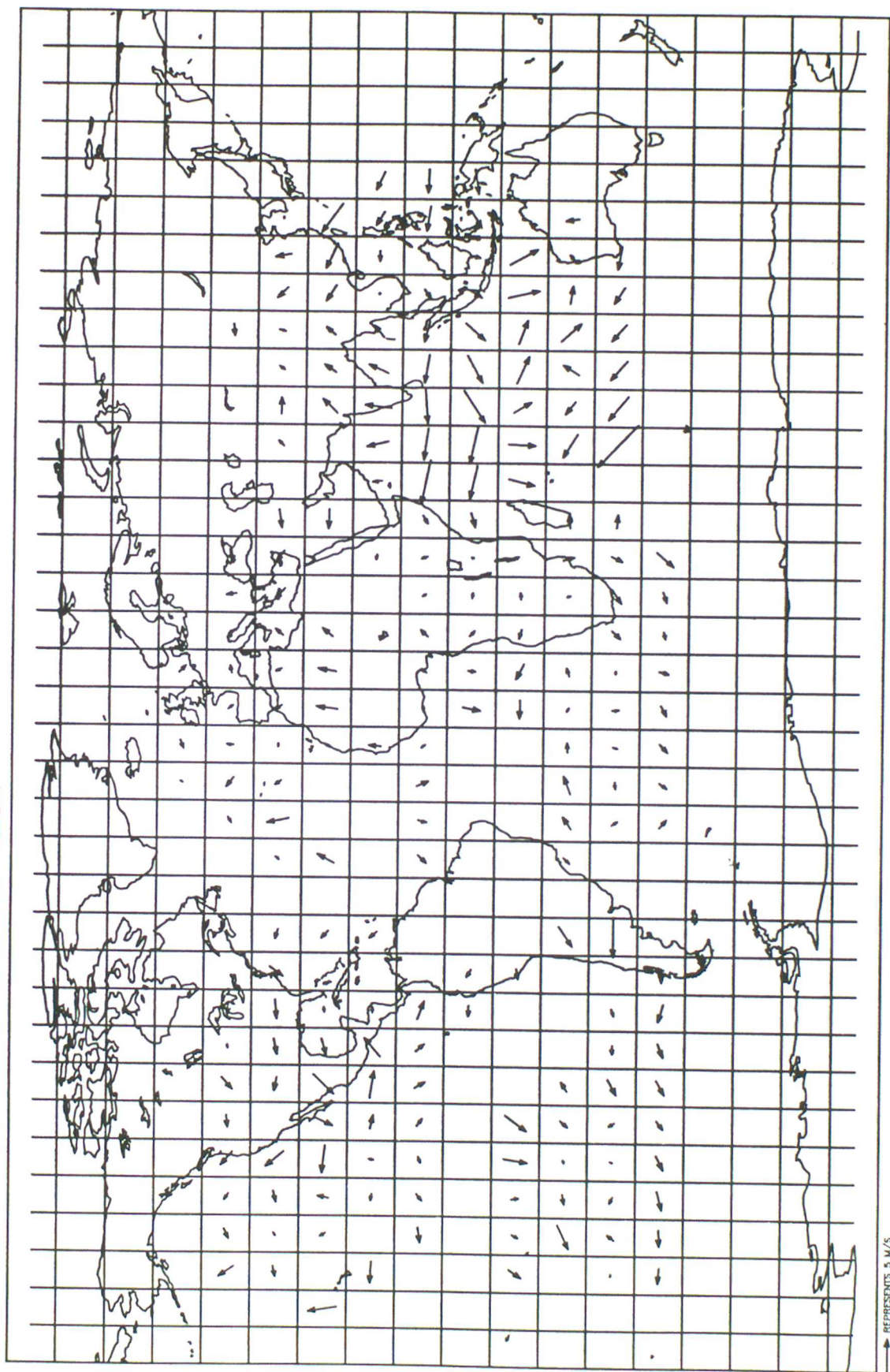
SATOB VECTOR MEAN WINDS BETWEEN 401-700 HPA
NOVEMBER 1994
ALL OBSERVATIONS
ARROWS PLOTTED WHERE MORE THAN 10 OBS ARE PRESENT

FIGURE 16

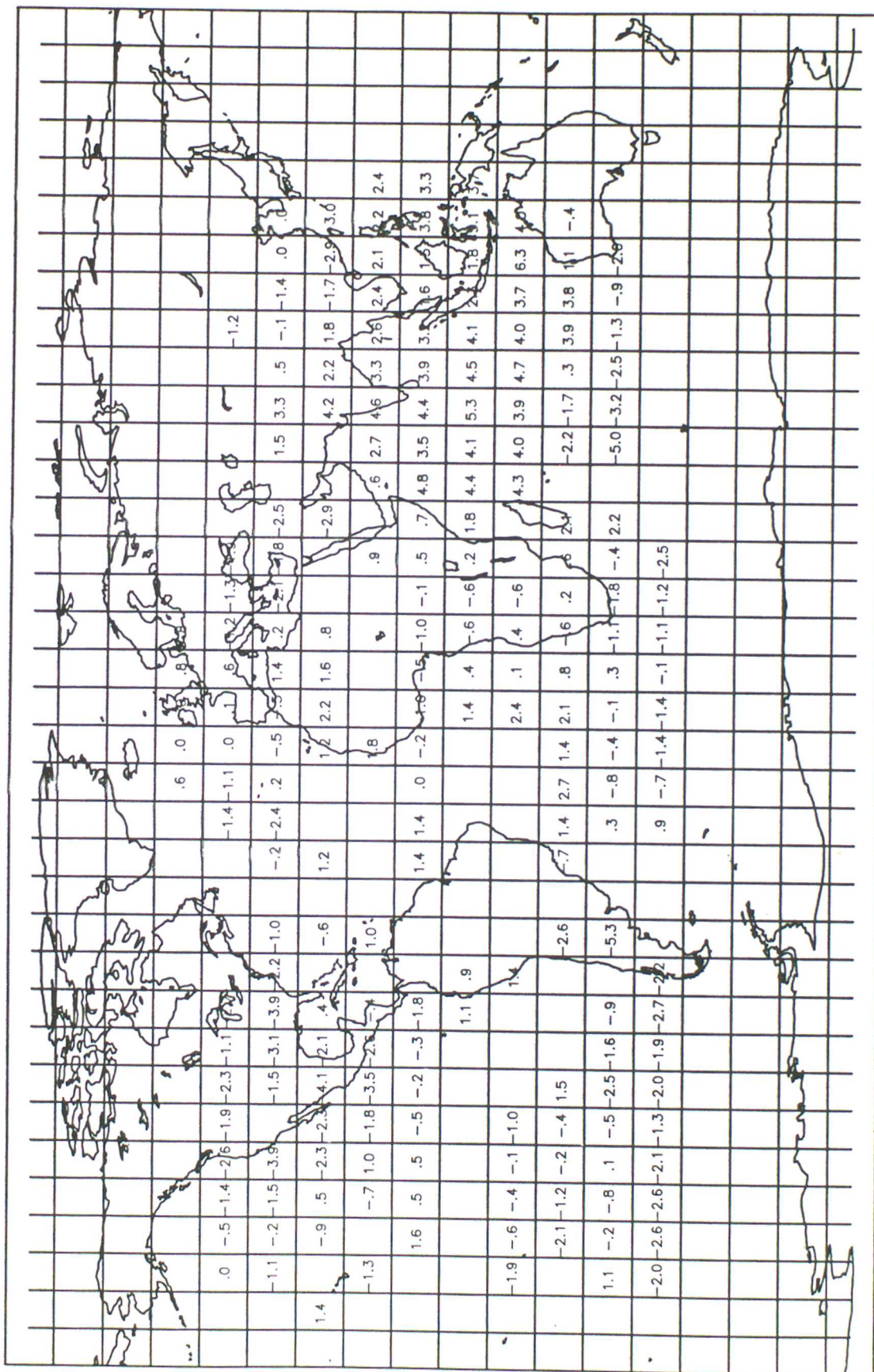


SATOB O-B VECTOR WIND DIFFERENCES BETWEEN 401-700 HPA
NOVEMBER 1994
ALL OBSERVATIONS
ARROWS PLOTTED WHERE MORE THAN 10 OBS ARE PRESENT

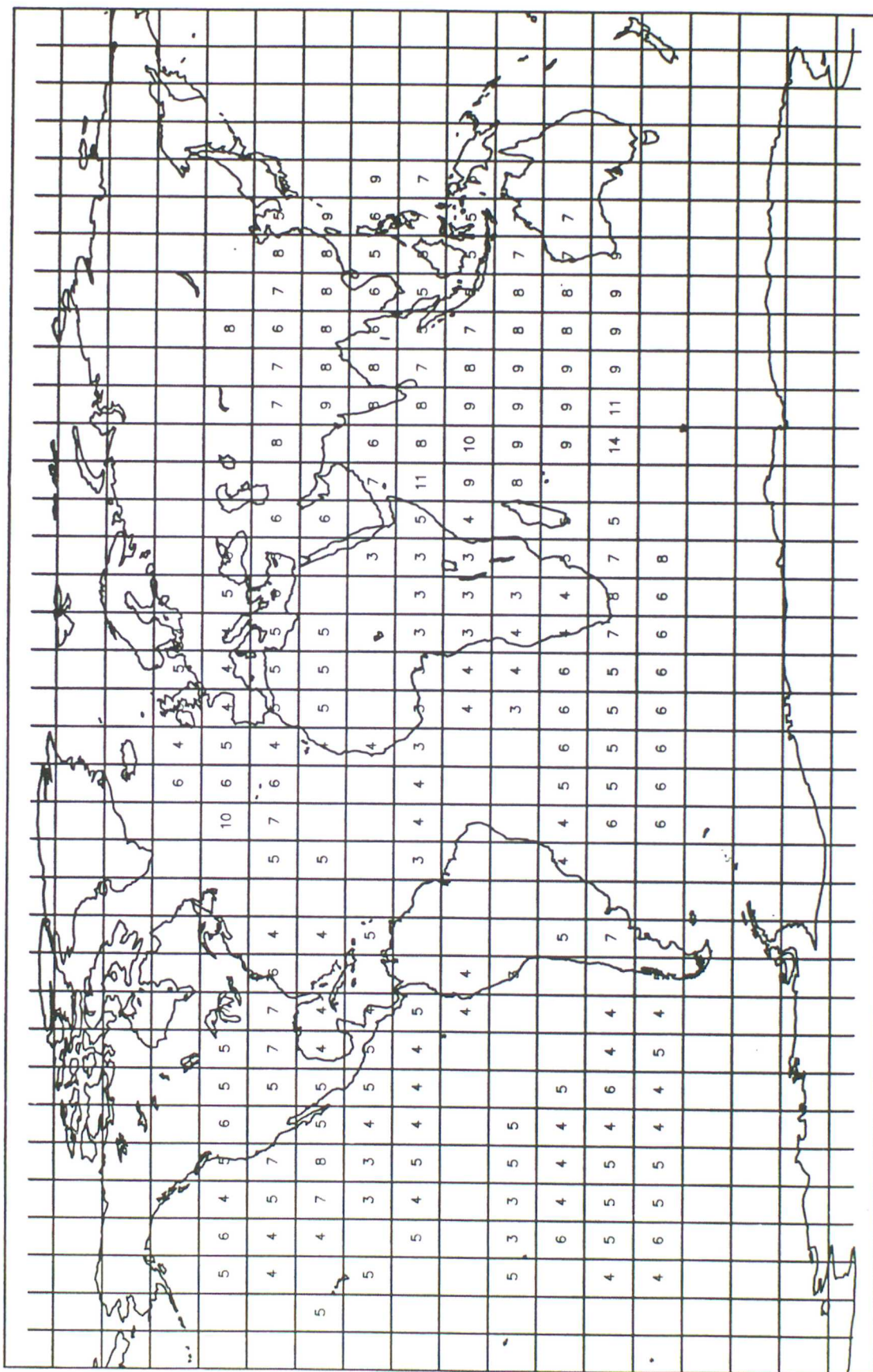
FIGURE 17



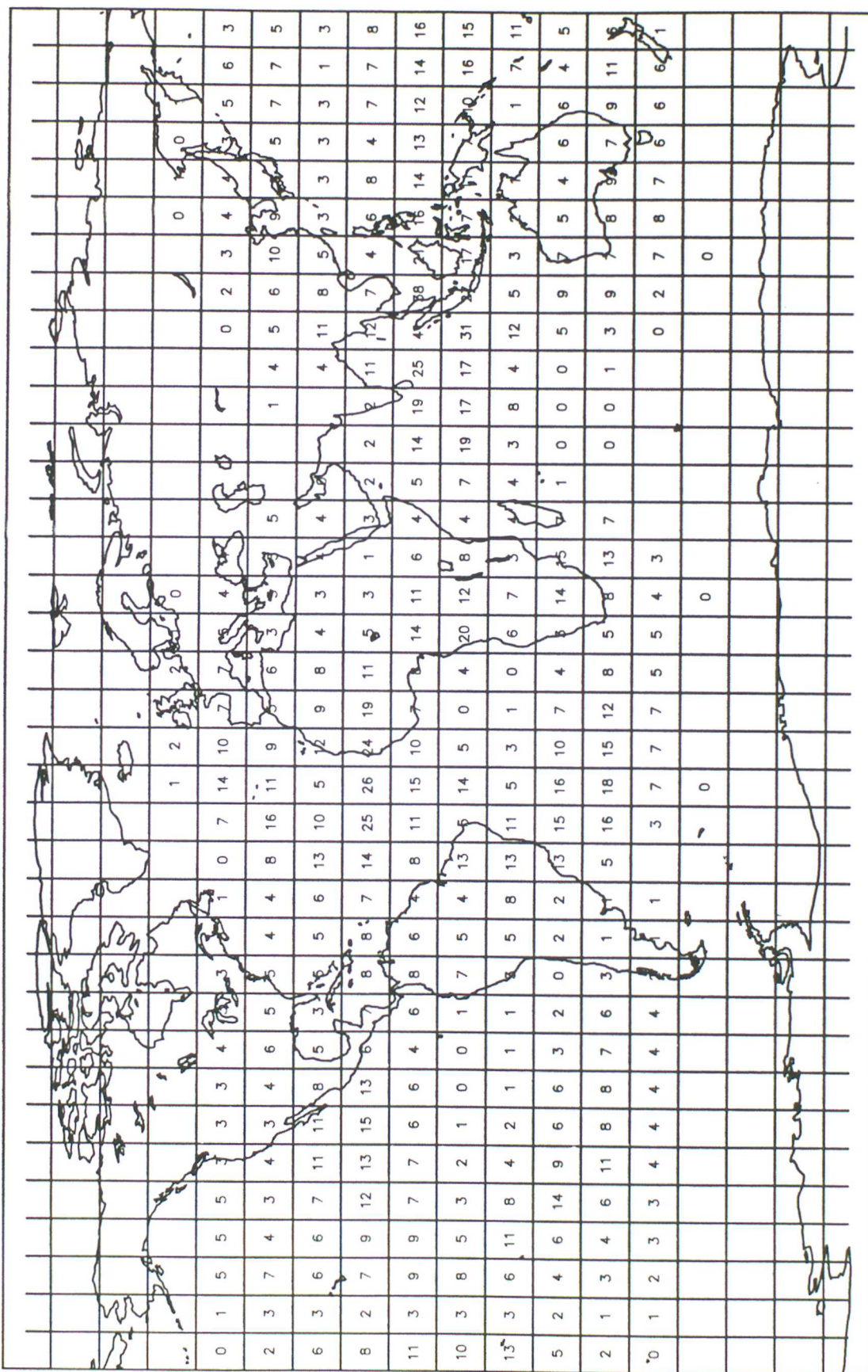
SATOB5 : MEAN O-B SPEED DIFFERENCES (M/S) BETWEEN 401 AND 700 HPA
NOVEMBER 1994
USING ALL OBSERVATIONS
VALUES ARE PRINTED WHERE MORE THAN 10 OBS ARE PRESENT



SATOB5 : RMS O-B VECTOR DIFFERENCES (M/S) BETWEEN 401 AND 700 HPA
NOVEMBER 1994
USING ALL OBSERVATIONS
VALUES ARE PRINTED WHERE MORE THAN 10 OBS ARE PRESENT



AVERAGE DAILY NUMBER OF SATOB OBSERVATIONS BETWEEN 101 AND 400 HPA FIGURE 20
NOVEMBER 1994



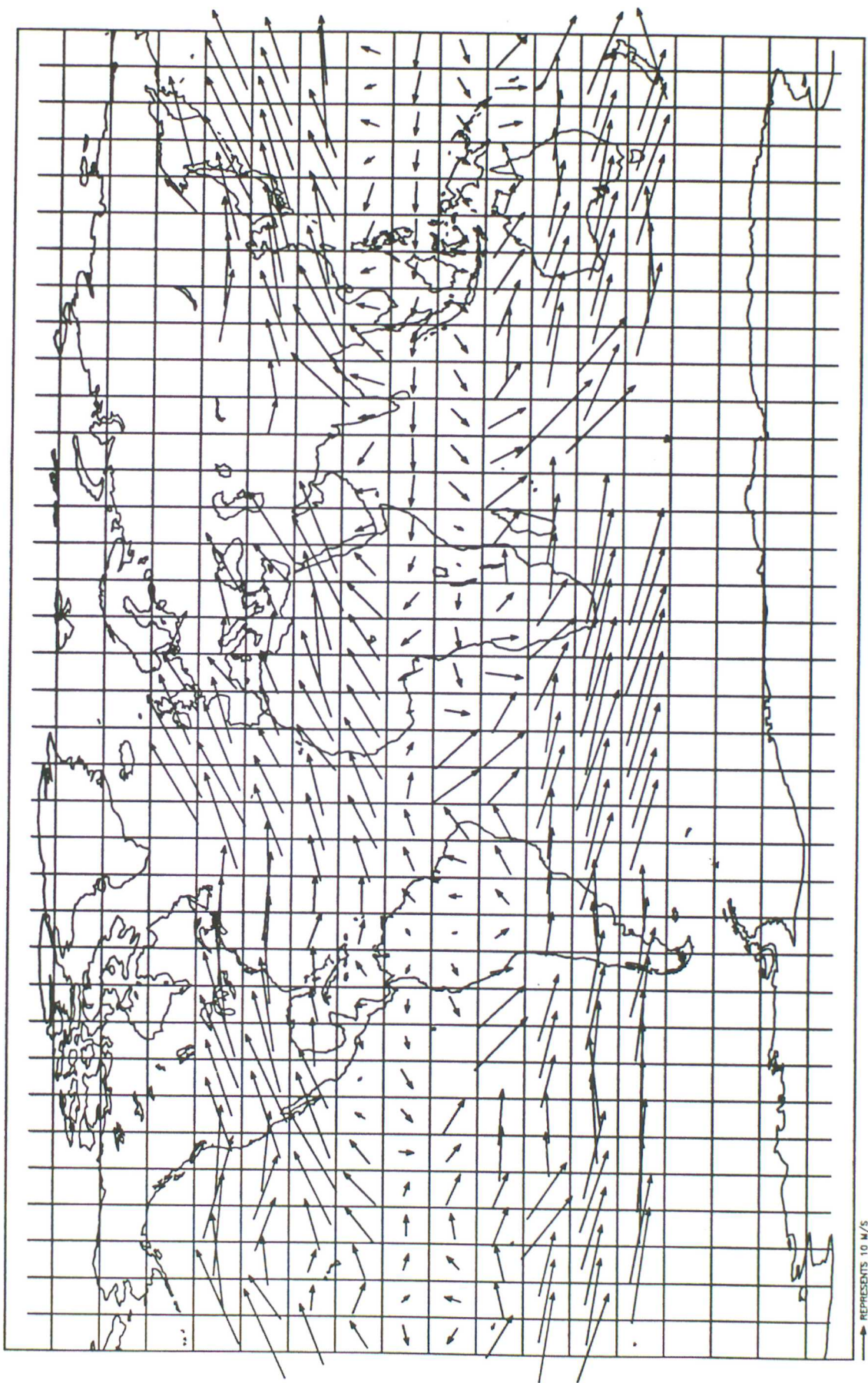
SATOB VECTOR MEAN WINDS BETWEEN 101-400 HPA

NOVEMBER 1994

ALL OBSERVATIONS

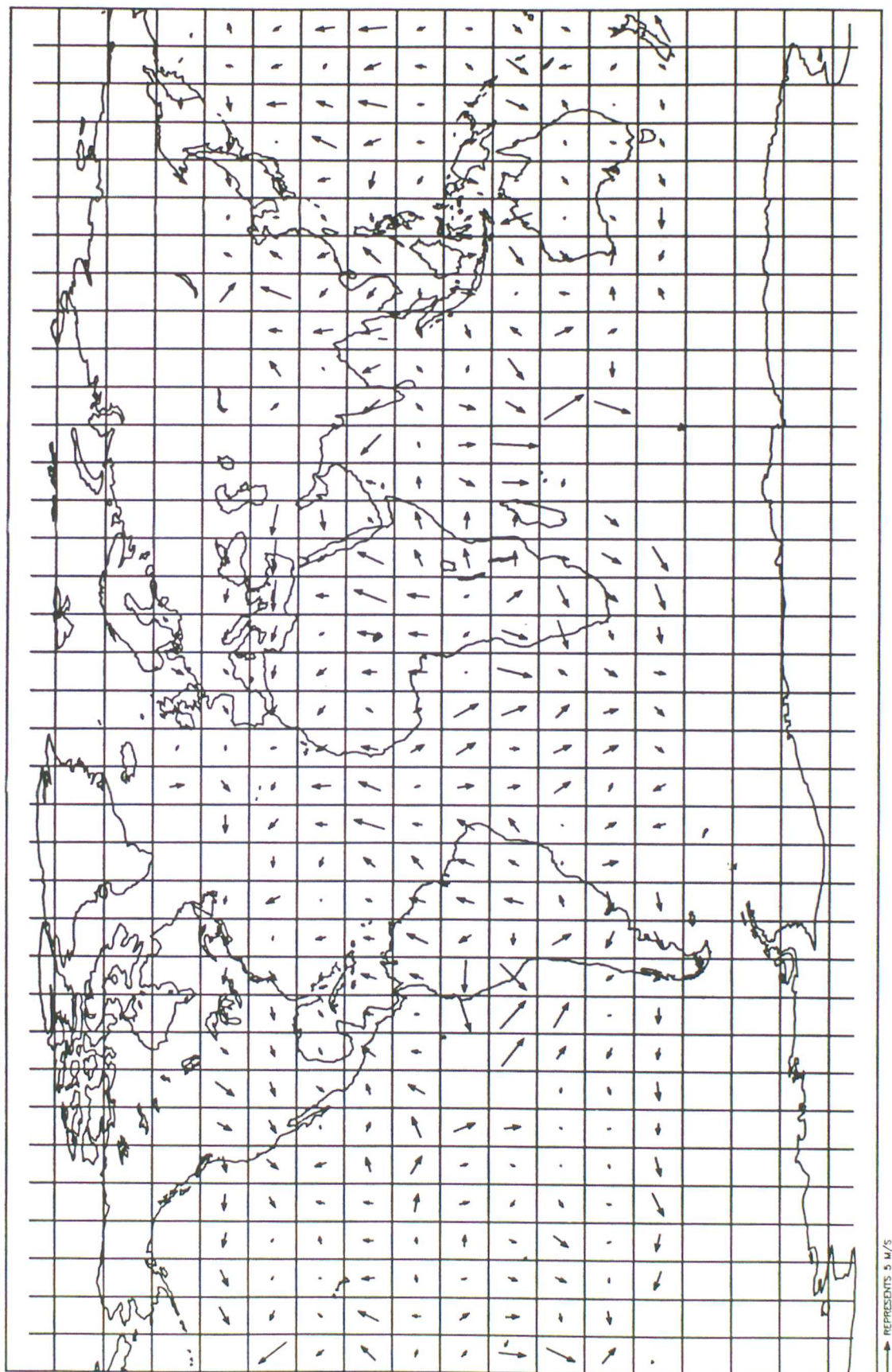
ARROWS PLOTTED WHERE MORE THAN 10 OBS ARE PRESENT

FIGURE 21

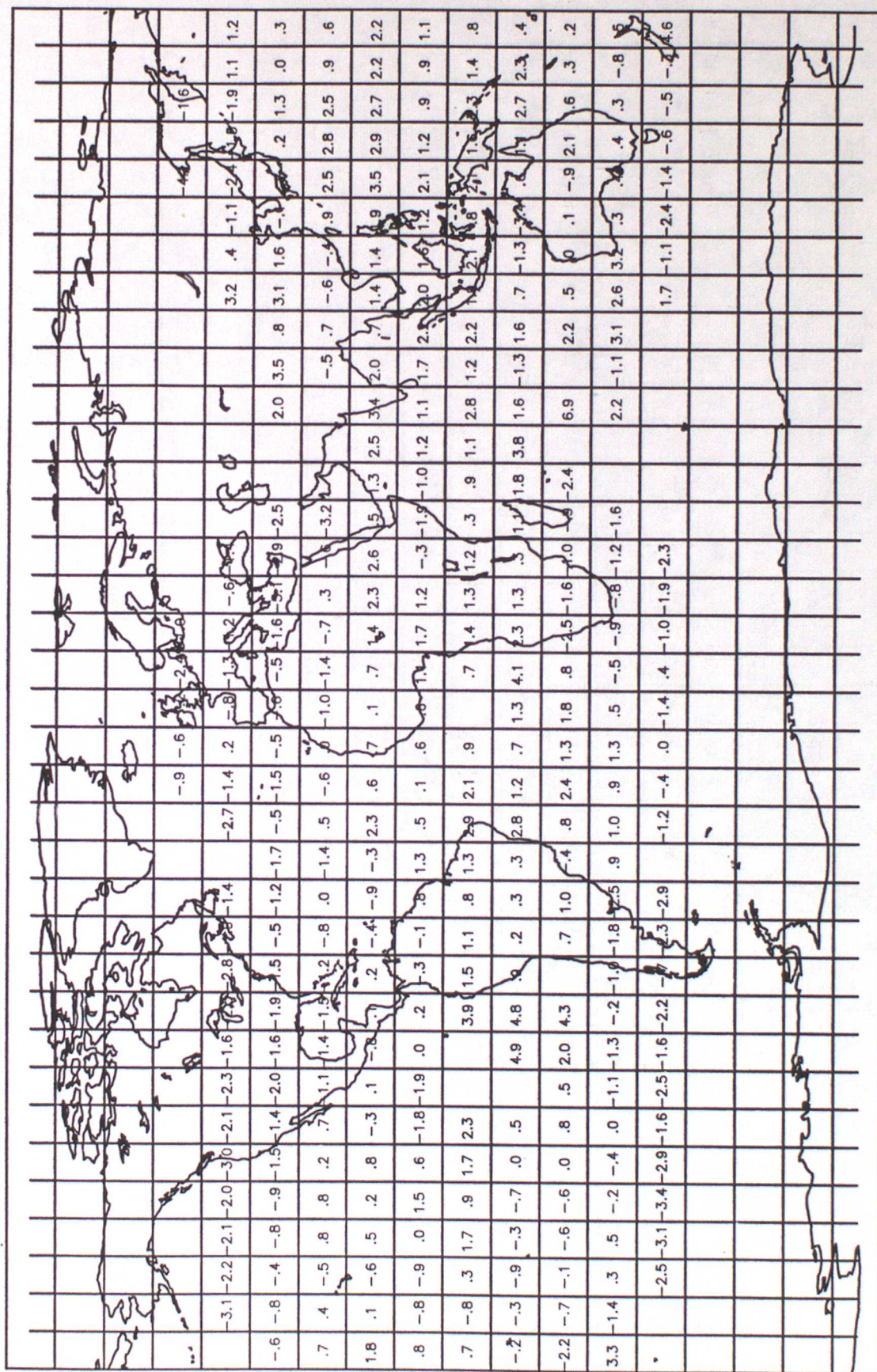


SATOB O-B VECTOR WIND DIFFERENCES BETWEEN 101-400 HPA
NOVEMBER 1994
ALL OBSERVATIONS
ARROWS PLOTTED WHERE MORE THAN 10 OBS ARE PRESENT

FIGURE 22



SATOB5 : MEAN O-B SPEED DIFFERENCES (M/S) BETWEEN 101 AND 400 HPA
NOVEMBER 1994
USING ALL OBSERVATIONS
VALUES ARE PRINTED WHERE MORE THAN 10 OBS ARE PRESENT



MONITORING OF SATELLITE TEMPERATURES

MONITORING CENTRE: BRACKNELL

MONTH: November, 94

Monitoring procedures

Period : One calendar month.

Data monitored : Reports from NOAA-11, NOAA-12 500 km.

Standard of comparison : Background field from Bracknell global model.

Selection Criteria : All SATEM soundings where number of observations > 30.

Data Extracted : Layer: 850 - 1000 hPa
 100 - 300 hPa
 30 - 50 hPa

: Mean observation minus background temperature differences

500 KM SATEMS : MEAN O-B TEMPERATURE DIFFERENCES (DEG C) : 850 TO 1000 HPA
 NOVEMBER 1994
 NOAA-11, USING ALL OBSERVATIONS
 VALUES ARE PRINTED WHERE MORE THAN 30 OBS ARE PRESENT

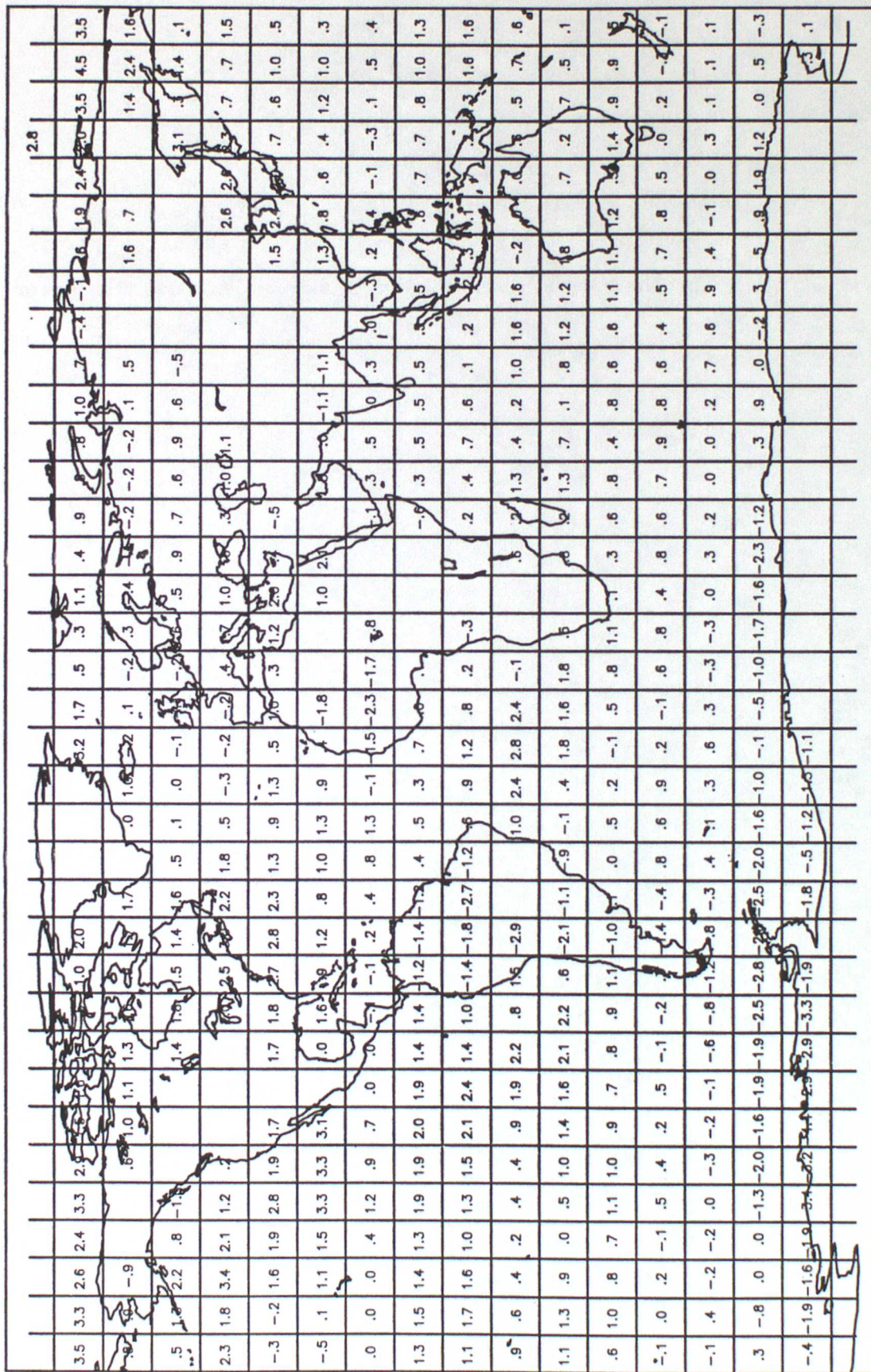
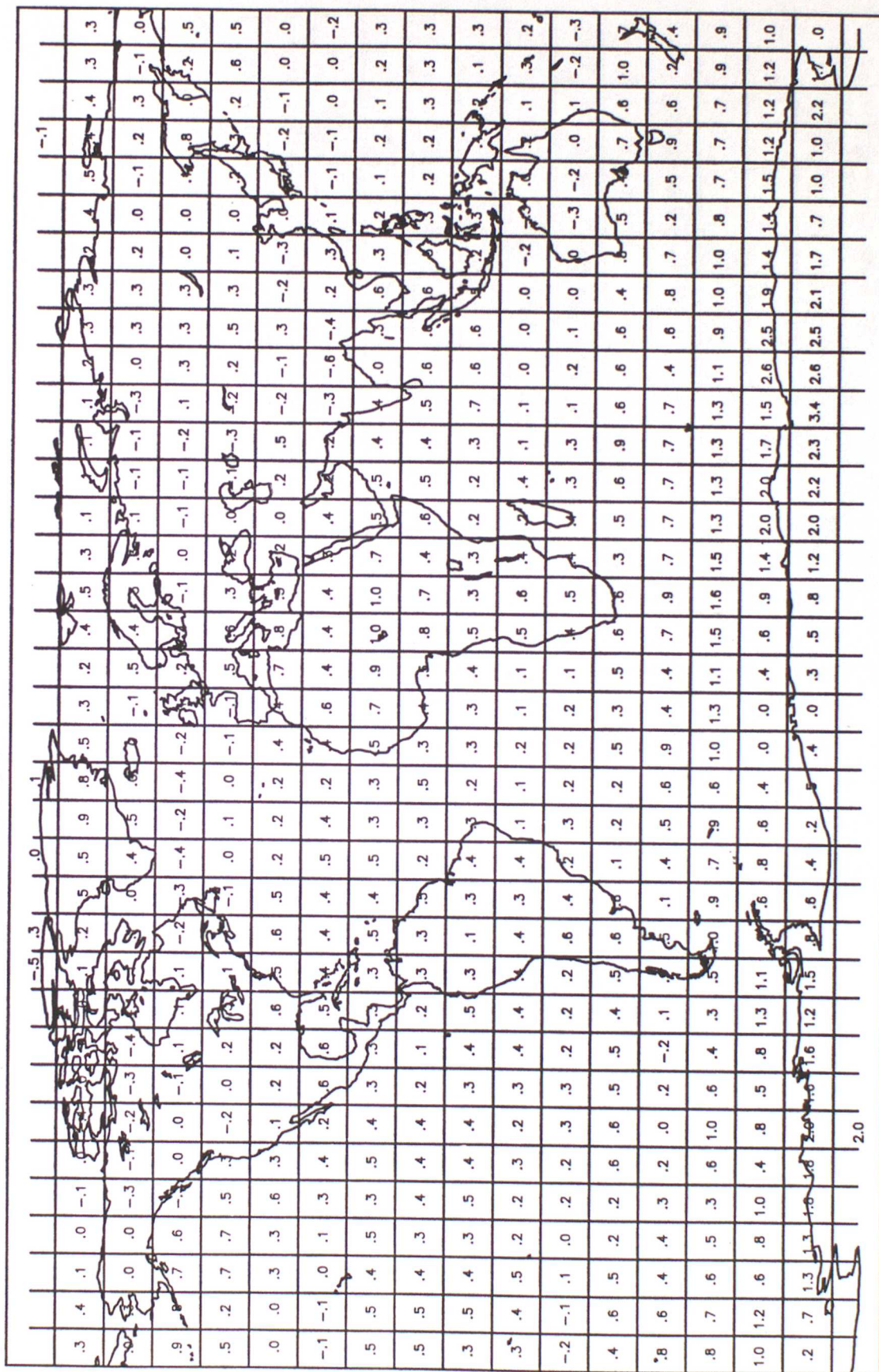
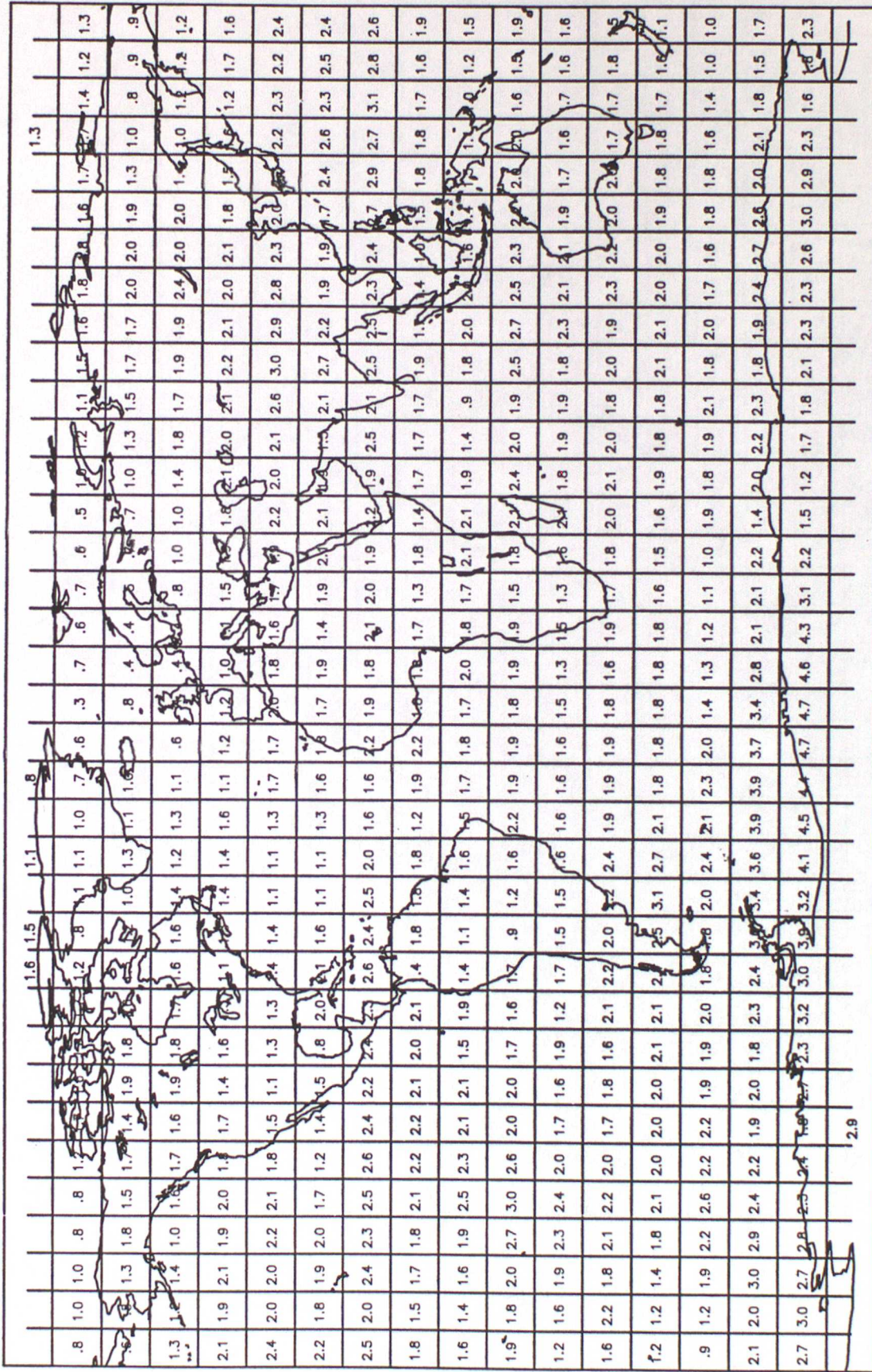


FIGURE 26

VALUES ARE PRINTED WHERE MORE THAN 30 OBS ARE PRESENT



500 KM SATEMS : MEAN O-B TEMPERATURE DIFFERENCES (DEG C) : 30 TO 50 HPA
 NOVEMBER 1994
 NOAA-11, USING ALL OBSERVATIONS
 VALUES ARE PRINTED WHERE MORE THAN 30 OBS ARE PRESENT



VALUES ARE PRINTED WHERE MORE THAN 30 OBS ARE PRESENT

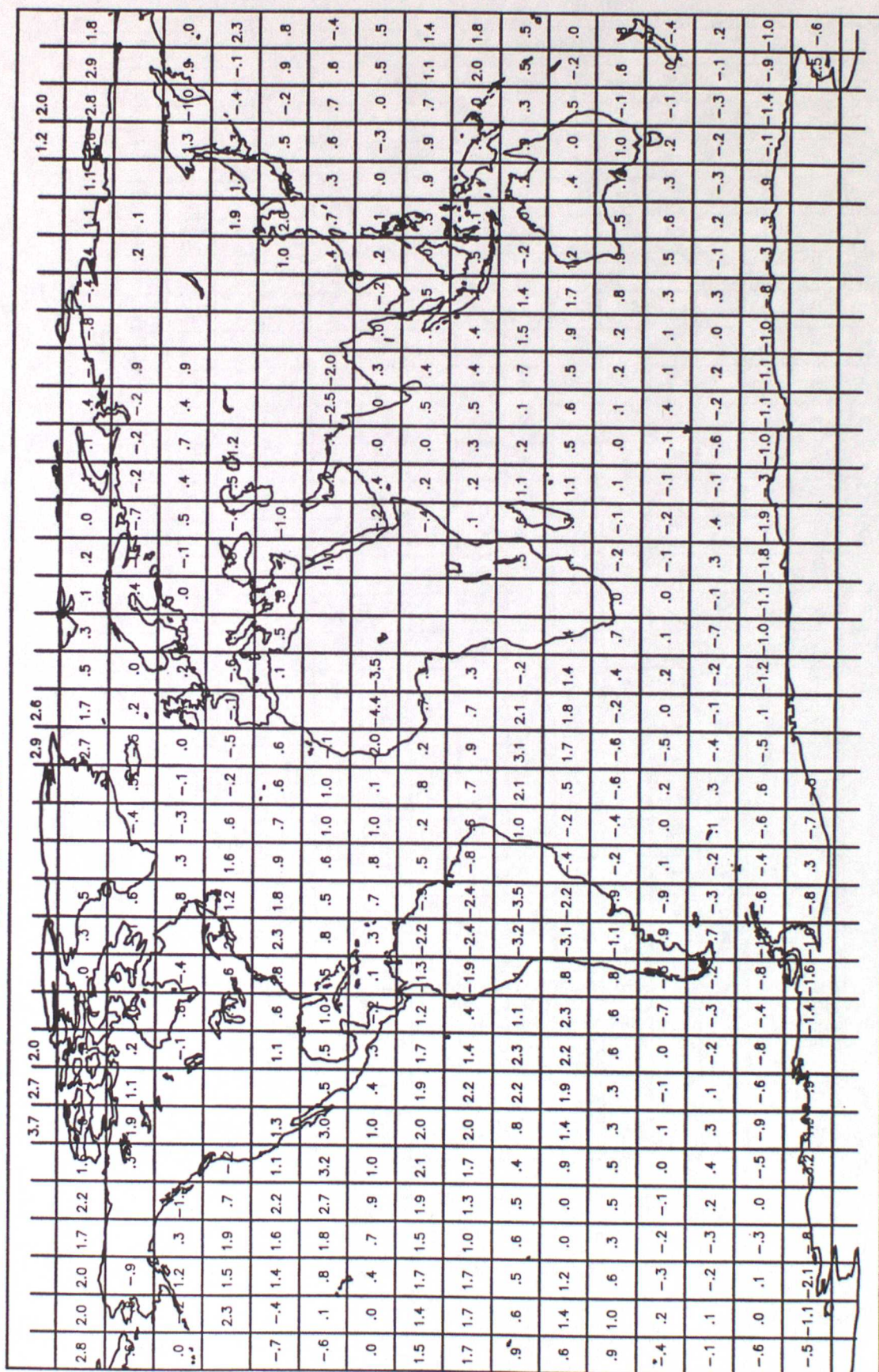
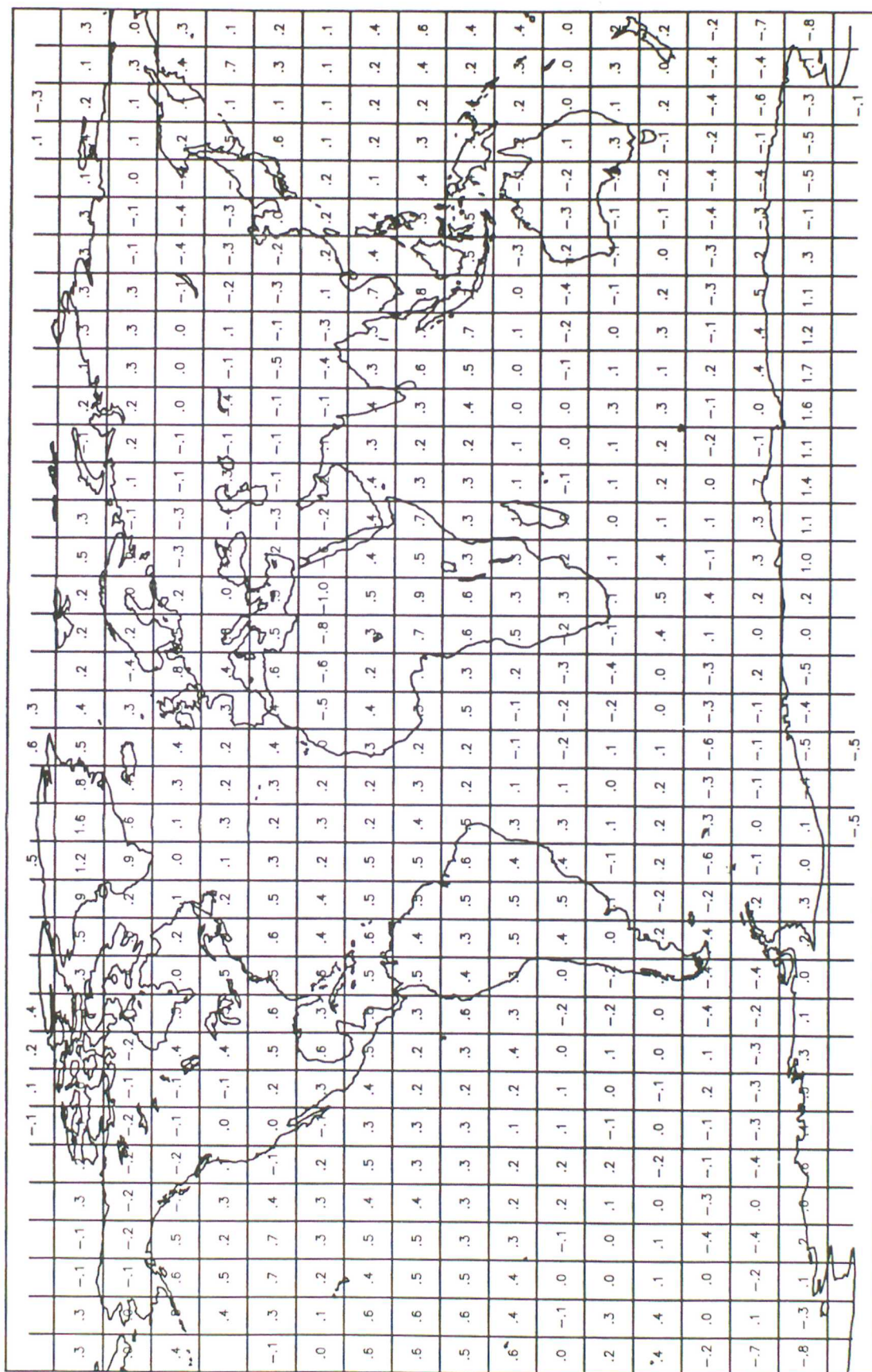


FIGURE 29

VALUES ARE PRINTED WHERE MORE THAN 30 OBS ARE PRESENT



500 KM SATEMS : MEAN O-B TEMPERATURE DIFFERENCES (DEG C) : 30 TO 50 HPA
 NOVEMBER 1994
 NOAA-12, USING ALL OBSERVATIONS
 VALUES ARE PRINTED WHERE MORE THAN 30 OBS ARE PRESENT

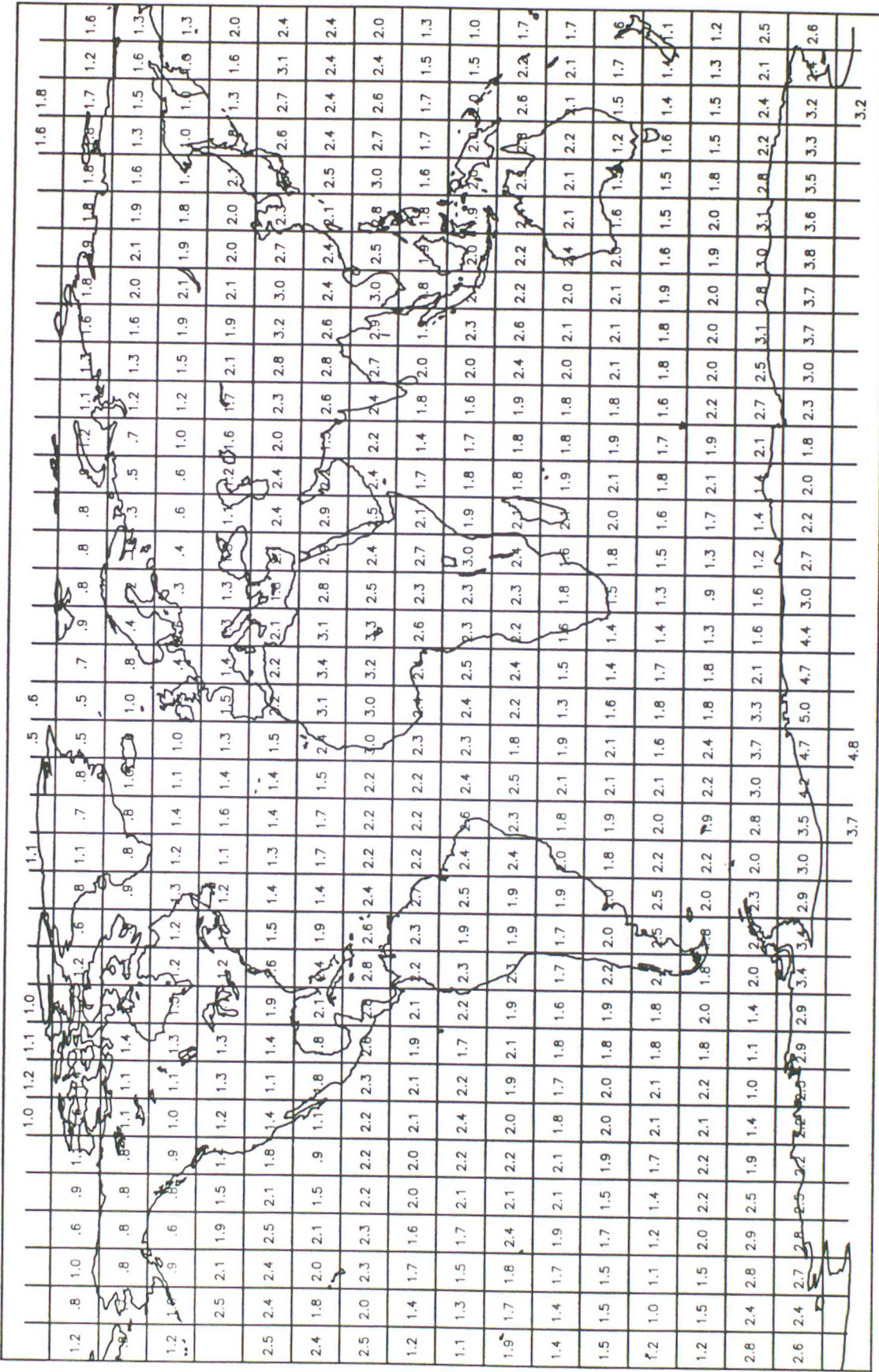


TABLE 8

MONTHLY MONITORING OF MARINE SURFACE OBSERVATIONS (COSNA)

DATA TYPE:- DRIFTER

MONITORING CENTRE: BRACKNELL

MONTH: November, 94

Monitoring procedures	
Period	:One calendar month.
Data monitored	:Reports from each unique identifier for drifting buoy.
Area monitored	:10°N - 80°N, 85°W - 0°W
Standard of comparison	:Background field from Bracknell global model.
Position	:Average latitude and longitude for period.
Observation times	:All hours combined.
Elements monitored	:Mean sea-level pressure (hPa) :Wind speed (m s^{-1}) :Wind direction (degrees)
Parameters monitored	:NOBS :Number of observations received excluding duplicates. :NGE :Number of observations with gross errors. :PGE :Percentage of observations with gross errors. :SD :SD of difference of observations from background values excluding those with gross errors. :BIAS :Mean difference of observations from background values excluding those with gross errors. N.B. A positive bias indicates the observation is veered to the background :RMS :Root Mean Square difference of observations from background values excluding those with gross errors
GROSS ERROR LIMITS	:15 hPa (pressure) :25 m s^{-1} (Vector Wind)

N.B. Observations of wind direction are only included in the wind direction statistics if the wind speed > 3 m s^{-1}

IDENTIFIER	LAT.	LONG.	HOUR	ELEM	LEVEL	NOBS	NGE	PGE	SD	BIAS	RMS
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MEAN SEA LEVEL PRESSURE

13556	24.6	-58.0	ALL	MSLP	SUR	158	0	0	1.3	0.5	1.4
13561	28.6	-42.3	ALL	MSLP	SUR	148	0	0	1.1	0.5	1.2
40604	19.0	-63.4	ALL	MSLP	SUR	1	0	0	0.0	-0.2	0.2
40605	13.2	-56.4	ALL	MSLP	SUR	3	0	0	0.4	-0.5	0.6
40708	51.0	-45.9	ALL	MSLP	SUR	1	0	0	0.0	-5.5	5.5
40805	29.4	-42.8	ALL	MSLP	SUR	1	0	0	0.0	0.0	0.0
40806	24.8	-43.9	ALL	MSLP	SUR	2	0	0	2.4	2.8	3.8
41522	30.9	-69.7	ALL	MSLP	SUR	35	0	0	0.8	0.4	0.9
44617	51.7	-41.0	ALL	MSLP	SUR	805	10	1	2.2	-0.2	2.2
44727	54.4	-39.5	ALL	MSLP	SUR	216	47	22	3.2	-0.6	3.3
44761	62.8	-21.7	ALL	MSLP	SUR	311	0	0	1.3	0.0	1.3
44762	53.7	-44.7	ALL	MSLP	SUR	789	6	1	2.5	-0.4	2.5
44764	56.9	-35.8	ALL	MSLP	SUR	955	1	0	2.2	0.4	2.3
44766	58.1	-59.0	ALL	MSLP	SUR	605	11	2	2.4	-1.1	2.7
44767	62.0	-35.3	ALL	MSLP	SUR	1187	1	0	1.7	-0.1	1.7
44768	57.6	-8.6	ALL	MSLP	SUR	971	0	0	1.4	0.0	1.4
44769	59.6	-18.8	ALL	MSLP	SUR	1065	2	0	2.0	0.1	2.0
44770	59.4	-42.6	ALL	MSLP	SUR	247	2	1	2.5	-0.6	2.6
44771	58.9	-10.9	ALL	MSLP	SUR	956	5	1	1.6	0.1	1.6
44774	51.0	-15.0	ALL	MSLP	SUR	801	1	0	1.3	0.2	1.4
44775	51.8	-39.8	ALL	MSLP	SUR	796	6	1	2.3	-0.1	2.3
44776	56.1	-38.4	ALL	MSLP	SUR	995	2	0	2.3	0.3	2.3
44780	55.6	-40.2	ALL	MSLP	SUR	479	0	0	2.2	0.1	2.2
62501	48.9	-5.1	ALL	MSLP	SUR	499	0	0	1.0	-0.9	1.4
62507	50.2	-9.4	ALL	MSLP	SUR	491	0	0	1.2	0.7	1.4
62508	44.9	-14.1	ALL	MSLP	SUR	129	16	12	5.2	-6.1	8.0
62509	47.5	-15.6	ALL	MSLP	SUR	313	0	0	1.1	0.5	1.2
62510	48.0	-19.8	ALL	MSLP	SUR	466	0	0	1.3	0.5	1.4
62511	44.5	-17.0	ALL	MSLP	SUR	413	0	0	1.2	0.8	1.4
62512	45.9	-15.1	ALL	MSLP	SUR	433	0	0	1.1	0.8	1.4
62513	48.2	-20.4	ALL	MSLP	SUR	401	0	0	1.3	0.5	1.4
62514	39.8	-12.2	ALL	MSLP	SUR	21	0	0	1.3	-1.2	1.8
62524	27.9	-30.8	ALL	MSLP	SUR	454	0	0	1.6	0.2	1.6
62675	59.7	-14.0	ALL	MSLP	SUR	210	16	8	2.3	-1.8	2.9
62721	60.2	-11.0	ALL	MSLP	SUR	190	0	0	1.4	0.4	1.4
64528	59.5	-41.3	ALL	MSLP	SUR	715	0	0	2.4	-0.7	2.5
64529	61.1	-33.9	ALL	MSLP	SUR	523	0	0	1.9	-0.1	1.9
64544	60.7	-41.1	ALL	MSLP	SUR	268	0	0	1.4	0.1	1.4
65571	58.2	-41.8	ALL	MSLP	SUR	690	4	1	2.4	-0.8	2.5
65592	57.7	-38.6	ALL	MSLP	SUR	601	12	2	2.4	-0.1	2.5

WIND SPEED

13556	24.6	-58.0	ALL	SPEED	SUR	404	0	0	1.5	-1.8	2.4
40604	19.0	-63.4	ALL	SPEED	SUR	1	0	0	0.0	0.0	0.0
40605	13.2	-56.4	ALL	SPEED	SUR	3	0	0	1.7	2.0	2.6
40708	51.0	-45.9	ALL	SPEED	SUR	1	0	0	0.0	-4.1	4.1
40805	29.4	-42.8	ALL	SPEED	SUR	1	0	0	0.0	-4.8	4.8
40806	24.8	-43.9	ALL	SPEED	SUR	1	0	0	0.0	1.6	1.6
44617	51.7	-41.0	ALL	SPEED	SUR	757	1	0	2.6	-1.3	2.9
44727	54.4	-39.5	ALL	SPEED	SUR	171	0	0	2.3	-0.1	2.3
44762	53.7	-44.7	ALL	SPEED	SUR	735	2	0	2.6	-0.3	2.6
44764	56.9	-35.8	ALL	SPEED	SUR	903	4	0	2.9	0.2	2.9
44776	56.1	-38.4	ALL	SPEED	SUR	946	1	0	2.8	-0.7	2.9
62508	44.9	-14.1	ALL	SPEED	SUR	231	0	0	2.0	-0.3	2.0
62513	48.2	-20.4	ALL	SPEED	SUR	1	0	0	0.0	1.4	1.4
64544	60.7	-41.1	ALL	SPEED	SUR	205	0	0	4.1	-6.3	7.5

WIND DIRECTION

13556	24.6	-58.0	ALL	DIRN.	SUR	205	0	0	22.6	-6.3	23.5
40605	13.2	-56.4	ALL	DIRN.	SUR	2	0	0	14.5	-7.2	16.2

IDENTIFIER	LAT.	LONG.	HOUR	ELEM	LEVEL	NOBS	NGE	PGE	SD	BIAS	RMS
WIND DIRECTION											
40708	51.0	-45.9	ALL	DIRN.	SUR	1	0	0	0.0	114.8	114.8
40805	29.4	-42.8	ALL	DIRN.	SUR	1	0	0	0.0	144.8	144.8
40806	24.8	-43.9	ALL	DIRN.	SUR	1	0	0	0.0	-57.7	57.7
44617	51.7	-41.0	ALL	DIRN.	SUR	723	1	0	34.6	1.9	34.7
44727	54.4	-39.5	ALL	DIRN.	SUR	150	0	0	35.9	0.1	35.9
44762	53.7	-44.7	ALL	DIRN.	SUR	720	2	0	27.8	18.1	33.2
44764	56.9	-35.8	ALL	DIRN.	SUR	867	4	0	29.8	0.7	29.8
44776	56.1	-38.4	ALL	DIRN.	SUR	899	1	0	59.2	6.4	59.5
62508	44.9	-14.1	ALL	DIRN.	SUR	210	0	0	20.5	-9.2	22.4
64544	60.7	-41.1	ALL	DIRN.	SUR	167	0	0	31.2	3.4	31.4

TABLE 9

MONTHLY MONITORING OF AIRCRAFT OBSERVATIONS (COSNA)
 MONITORING CENTRE: BRACKNELL
 MONTH: November, 94

Monitoring procedures:		
Period		:One calendar month.
Data monitored		:Statistics for each airline carrier.
Area monitored		:40°N - 70°N, 60°W - 0°W.
Standard of comparison		:Background field from Bracknell global model.
Observation times		:All hours combined.
Level(s) monitored		:300.0 - 150.0 hPa
Elements monitored		:TEMP in °C ; WIND in m s ⁻¹
Parameters monitored	:N REP.	:Number of observations received excluding duplicates.
	:PG	:Percentage of observations with gross errors.
	:PR	:Percentage of observations rejected by quality control including rejections from the duplicate check.
	:PC	:Percentage of observations with calm winds.
	:RMS	:Root Mean Square difference of observations from background values excluding those with gross errors in Temperature & vector wind.
	:BIAS	:Mean difference of observations from background values excluding those with gross errors in Temperature & vector wind.
GROSS ERROR LIMITS		:10.0 °C ; 60 m s ⁻¹ Vector Wind
SELECTION CRITERIA		:N REP ≥ 20

IDENT.	N.REP.	TEMPERATURE				N.REP.	WIND				BIAS
		PG	PR	RMS	PG		PR	PC	RMS		
AAL	2313	0	2	1.9	-0.1	2325	0	2	0	8.8	1.2
AAN	22	0	0	2.0	-0.4	22	0	0	0	6.0	0.6
ACA	528	0	1	1.9	0.1	536	0	2	1	7.3	0.3
AEA	59	8	19	3.4	0.9	58	2	9	0	12.9	1.4
AEL	109	1	6	2.3	-0.5	112	0	4	0	11.3	0.7
AFL	65	0	100	3.7	2.2	67	0	100	0	13.7	0.9
AFR	673	0	7	2.0	0.1	686	0	7	0	8.8	0.8
AIC	34	0	3	3.2	1.1	35	0	6	0	8.6	2.7
AMX	144	3	100	2.4	0.1	147	1	1	0	8.4	1.1
ANZ	139	0	5	2.1	-0.9	145	0	7	1	7.7	1.3
AOM	219	1	3	2.2	1.0	222	0	4	0	11.5	1.1
ATN	25	4	20	3.7	-2.3	26	0	100	0	13.1	-3.4
AUA	51	0	0	2.4	-1.3	53	0	6	0	9.7	2.7
AVA	78	0	3	1.8	-0.2	78	0	5	0	11.2	-0.3
AZA	403	0	2	2.2	0.8	410	0	5	0	10.0	0.8
BAL	93	0	22	2.0	-0.3	96	0	21	0	9.7	2.5
BAW	1171	0	4	2.1	-0.1	1180	0	5	0	9.5	1.6
BWA	91	0	1	2.1	0.6	93	0	2	0	9.6	1.4
CDN	642	0	4	1.9	0.3	647	0	4	1	7.2	0.5
CFG	415	1	3	2.3	-0.6	421	0	3	0	9.4	1.7
CKT	26	0	12	2.2	-0.5	26	0	19	0	12.0	1.3
CLX	52	0	0	2.1	-0.6	54	0	2	0	7.7	1.0
CMM	20	0	25	2.4	0.3	20	0	20	0	9.8	-0.2
COA	291	0	3	2.1	0.8	296	1	4	0	11.0	2.0
CRL	39	0	10	3.0	-0.5	39	0	5	0	9.7	2.8
CTM	24	0	21	3.3	-0.8	24	0	13	0	9.8	-0.1
CUB	66	0	6	2.3	0.6	64	0	3	0	9.6	1.0
DAL	2282	0	2	2.2	0.4	2310	0	3	0	9.4	0.9
DHL	278	1	100	3.7	-2.1	281	1	100	0	12.5	1.3
DLH	1831	0	7	2.0	0.1	1865	0	10	1	9.1	1.2
DOA	98	2	17	4.0	2.6	101	1	14	0	10.1	-0.1
ELY	134	0	10	1.9	0.0	139	0	11	0	10.0	0.5
EWV	31	10	10	2.9	0.7	31	0	3	0	10.9	-1.6
FDX	323	1	2	2.1	0.9	326	0	4	1	9.1	1.1
FIN	345	1	5	2.1	0.3	344	0	4	1	8.7	0.9
GAF	94	2	4	1.9	0.4	95	0	1	0	7.6	0.4
GFA	29	0	7	2.6	0.3	29	0	10	0	6.2	0.1
HLF	71	1	4	2.0	-0.8	71	1	6	0	11.7	-0.3
IBE	776	1	20	2.1	0.5	783	0	21	0	11.5	0.8
ICE	435	0	2	2.1	0.2	435	0	1	1	7.8	0.7
JAL	22	0	14	2.6	-0.1	22	0	18	0	11.8	0.7
KLM	1565	0	2	2.0	0.3	1574	0	3	0	9.3	1.5
LDA	117	3	12	2.2	-0.9	120	1	13	0	9.9	1.0
LDI	74	0	4	2.3	-1.0	74	0	4	0	9.5	1.8
LIB	42	0	5	1.5	0.3	43	0	5	0	8.4	1.4
LOT	465	0	2	2.2	0.4	467	0	2	0	7.7	0.5
LTU	402	1	3	2.0	0.3	405	1	5	0	9.6	0.9
MKD	88	0	2	1.9	0.3	91	0	1	0	9.8	0.4
MOD	38	11	16	2.2	0.7	38	0	21	0	12.1	2.2
MPH	365	0	2	2.0	0.1	368	0	3	0	10.1	1.5
NWA	1796	0	2	2.2	1.0	1833	0	4	1	9.2	0.9
OAL	32	0	6	2.3	0.4	33	0	6	0	11.2	4.1
PIA	20	5	10	3.2	-0.2	20	0	5	0	12.5	2.4
RAF	20	0	10	2.0	0.8	20	0	10	0	10.1	3.4
RJA	41	0	0	2.6	1.5	41	0	2	0	7.4	2.0
ROT	22	0	0	2.5	-1.4	22	0	0	0	6.6	0.8
RRR	128	0	20	2.1	0.4	128	0	100	1	10.9	1.1
SAB	71	1	3	1.8	-0.5	75	0	1	0	8.0	1.2
SAS	1109	0	1	1.9	-0.1	1110	0	3	1	8.1	0.6

IDENT.	N.REP.	TEMPERATURE				BIAS	N.REP.	WIND				BIAS
		PG	PR	RMS				PG	PR	PC	RMS	
SIA	50	2	6	2.0	-0.2		54	0	4	0	9.8	-1.1
SPP	115	0	9	2.0	0.3		115	0	10	0	10.8	1.0
SVA	86	0	3	2.0	0.1		93	0	8	1	9.7	0.4
SWR	216	0	2	2.1	0.4		221	0	2	0	10.0	1.7
TAP	225	0	4	2.0	0.1		224	0	4	0	10.6	1.2
TEJ	39	0	21	1.9	0.5		38	0	26	0	10.8	1.1
TIH	40	0	0	1.6	0.4		41	0	2	2	12.7	4.1
TOW	40	3	3	2.5	0.5		41	0	100	0	11.5	2.1
TWA	964	1	4	2.2	0.5		966	0	4	0	10.0	0.7
UAL	1540	1	3	2.2	-0.5		1539	0	4	1	8.8	0.8
ULE	61	2	0	2.1	-0.3		62	0	2	0	9.0	1.5
UPS	375	1	14	2.1	0.0		380	0	17	0	10.2	1.4
USA	162	1	4	2.1	-0.6		167	0	5	0	9.2	1.6
VIA	94	1	0	2.0	1.2		96	0	4	0	13.0	1.0
VIR	132	1	5	2.0	-0.4		130	0	7	0	11.9	2.5
BA	7113	0	13	1.8	0.6		7111	0	13	0	8.2	1.5
KL	1227	0	100	2.8	2.3		1227	0	21	0	8.5	1.0
M	81	1	4	3.0	0.5		89	0	6	0	11.4	1.0
N	241	2	5	2.5	0.7		246	0	4	1	9.2	0.3

TABLE 10

MONTHLY MONITORING OF RADIOSONDE OBSERVATIONS (COSNA)
 MONITORING CENTRE: BRACKNELL
 MONTH: November, 94

Monitoring procedures

Period		:One calendar month.
Data monitored		:Reports from each unique identifier for radiosonde TEMPs.
Area monitored		:0°N - 90°N, 100°W - 40°E
Standard of comparison		:Background field from Bracknell global model.
Position		:Average latitude and longitude for period.
Observation times		:00, 12 UTC.
Level monitored		:100 hPa.
Element monitored		:GEOPOTENTIAL HEIGHT in metres
Parameters monitored	:NUM OBS	:Number of observations available at level shown during period.
	:NUM GROSS	:Number of gross errors at level shown during period.
	:% REJ	:Percentage of observations rejected by quality control at level shown during period.
	:SD	:SD of difference of observations from background values at level shown excluding those with gross errors.
	:BIAS	:Mean difference of observations from background values at level shown excluding those with gross errors.
GROSS ERROR LIMITS		:Defined in Appendix I.1

WMO IDENT	OBS TIME	ELM	LEV	NUM OBS	NUM GROSS	SD	RMS	BIAS
BNOR	00	Z	100	1	0	0.0	20.0	-20.0
DB/H	00	Z	100	1	0	0.0	24.0	24.0
DBBH	00	Z	100	7	0	16.7	16.7	-1.0
DBBH	12	Z	100	3	0	5.2	16.5	15.7
DBLK	00	Z	100	1	0	0.0	22.0	-22.0
EHOA	00	Z	100	1	0	0.0	18.0	18.0
EHOA	12	Z	100	21	0	22.3	41.9	35.4
F	00	Z	100	1	0	0.0	51.0	-51.0
FNOR	00	Z	100	10	0	15.9	21.7	14.7
FNOR	12	Z	100	10	0	9.9	11.2	5.2
FNOU	00	Z	100	9	0	15.2	17.7	9.0
FNOU	12	Z	100	9	0	18.6	18.7	1.9
FNPB	00	Z	100	14	0	15.3	20.0	-13.0
FNPB	12	Z	100	13	0	20.9	28.0	-18.6
FNRS	00	Z	100	9	1	11.2	14.1	8.6
FNRS	12	Z	100	10	0	14.5	15.7	6.0
GACA	00	Z	100	28	0	17.8	25.9	18.8
GACA	12	Z	100	28	0	18.5	27.5	20.3
JBOA	00	Z	100	1	0	0.0	22.0	22.0
JCCX	00	Z	100	1	0	0.0	5.0	5.0
JDWX	00	Z	100	1	0	0.0	13.0	13.0
LDWR	00	Z	100	28	0	16.4	18.3	8.1
LDWR	12	Z	100	24	0	21.2	25.4	13.9
OXYL	00	Z	100	15	0	36.2	50.1	34.6
OXYL	12	Z	100	15	0	20.8	42.3	36.8
OZJP	00	Z	100	11	1	25.6	31.5	18.4
OZJP	12	Z	100	9	0	26.7	32.3	18.2
SHIPAA	12	Z	100	1	0	0.0	49.0	49.0
SHIPH	00	Z	100	1	0	0.0	41.0	41.0
SHIPS	00	Z	100	5	0	23.1	45.9	39.6
SHIPS	12	Z	100	9	0	25.5	65.1	59.9
V2LV	00	Z	100	23	0	19.8	22.1	9.8
V2LV	12	Z	100	22	0	24.0	33.4	23.2
V2LX	00	Z	100	25	0	22.7	27.1	14.8
V2LX	12	Z	100	25	0	22.8	29.3	18.4
ZDLG	12	Z	100	2	0	12.5	45.3	43.5
03953	00	Z	100	27	0	11.7	20.6	16.9
03953	12	Z	100	29	0	21.1	35.0	27.9
04018	00	Z	100	27	0	20.1	38.1	32.4
04018	12	Z	100	29	0	23.9	48.8	42.5
04220	00	Z	100	29	0	18.4	35.3	30.1
04220	12	Z	100	29	0	14.8	27.1	22.7
04270	00	Z	100	26	0	23.2	35.5	26.8
04270	12	Z	100	27	0	16.9	28.6	23.1
04339	00	Z	100	27	0	19.5	38.5	33.2
04339	12	Z	100	28	0	19.1	38.3	33.2
04360	00	Z	100	28	0	17.0	32.0	27.1
04360	12	Z	100	28	0	16.6	37.6	33.7
08001	00	Z	100	23	0	19.4	27.3	19.1
08001	12	Z	100	26	0	19.9	25.7	16.2
08508	00	Z	100	23	0	21.1	21.4	3.1
08508	12	Z	100	25	0	18.1	18.9	5.2
08594	00	Z	100	26	0	21.3	23.4	9.7
08594	12	Z	100	26	0	35.7	36.2	6.5
60020	00	Z	100	28	0	22.8	31.9	22.3
60020	12	Z	100	27	0	28.4	40.1	28.3
71600	00	Z	100	26	0	19.3	19.6	3.6
71600	12	Z	100	28	0	18.9	22.6	12.4
72201	00	Z	100	27	0	28.8	30.9	11.2
72201	12	Z	100	28	0	22.4	36.9	29.3

WMO IDENT	OBS TIME	ELM	LEV	NUM OBS	NUM GROSS	SD	RMS	BIAS
72402	00	Z	100	24	0	20.4	40.7	35.2
72402	12	Z	100	27	0	36.2	44.5	25.9
74494	00	Z	100	24	0	24.5	25.8	-7.9
74494	12	Z	100	26	0	23.0	23.4	-4.0

TABLE 11

MONTHLY MONITORING OF RADIOSONDE OBSERVATIONS (COSNA)
 MONITORING CENTRE: BRACKNELL
 MONTH: November, 94

Monitoring procedures:

Period		:One calendar month.
Data monitored		:Reports from each unique identifier for radiosonde TEMPs.
Area monitored		:0°N - 90°N, 100°W - 40°E
Standard of comparison		:Background field from Bracknell global model.
Position		:Average latitude and longitude for period.
Observation times		:00, 12 UTC.
Level monitored		:500 hPa.
Element monitored		:GEOPOTENTIAL HEIGHT in metres
Parameters monitored	:NUM OBS	:Number of observations available at level shown during period.
	:NUM GROSS	:Number of gross errors at level shown during period.
	:% REJ	:Percentage of observations rejected by quality control at level shown during period.
	:SD	:SD of difference of observations from background values at level shown excluding those with gross errors.
	:BIAS	:Mean difference of observations from background values at level shown excluding those with gross errors.
GROSS ERROR LIMITS		:Defined in Appendix I.1

WMO IDENT	OBS TIME	ELM	LEV	NUM OBS	NUM GROSS	SD	RMS	BIAS
BNOR	00	Z	500	1	0	0.0	4.0	-4.0
DB/H	00	Z	500	1	0	0.0	14.0	14.0
DBBH	00	Z	500	9	0	23.1	25.6	-11.0
DBBH	12	Z	500	3	0	20.9	22.1	-7.0
DEBK	00	Z	500	1	0	0.0	2.0	-2.0
EHOA	00	Z	500	1	0	0.0	15.0	15.0
EHOA	12	Z	500	21	0	10.7	19.3	16.1
F	00	Z	500	1	0	0.0	4.0	4.0
FNMR	00	Z	500	1	0	0.0	5.0	5.0
FNOR	00	Z	500	10	0	9.9	13.2	8.8
FNOR	12	Z	500	10	0	6.4	7.5	3.9
FNOU	00	Z	500	10	0	8.4	11.4	7.8
FNOU	12	Z	500	9	0	9.4	9.6	2.1
FNPB	00	Z	500	14	0	12.1	12.1	-1.0
FNPB	12	Z	500	13	0	12.1	12.1	-0.1
FNRS	00	Z	500	11	0	31.7	35.0	14.6
FNRS	12	Z	500	11	0	11.5	12.0	3.7
GACA	00	Z	500	28	0	16.1	16.2	1.9
GACA	12	Z	500	28	0	14.3	14.6	3.2
JBOA	00	Z	500	1	0	0.0	12.0	12.0
JCCX	00	Z	500	1	0	0.0	1.0	-1.0
JDWX	00	Z	500	1	0	0.0	8.0	-8.0
LDWR	00	Z	500	27	0	18.2	18.5	3.3
LDWR	12	Z	500	23	0	11.8	12.7	4.7
OXYL	00	Z	500	15	0	31.6	31.6	0.1
OXYL	12	Z	500	15	0	17.3	19.4	8.8
OZJP	00	Z	500	11	1	9.9	9.9	-0.4
OZJP	12	Z	500	10	0	17.6	18.1	4.5
SHIPA	00	Z	500	1	0	0.0	10.0	10.0
SHIPAA	00	Z	500	4	0	10.7	17.6	14.0
SHIPAA	12	Z	500	1	0	0.0	34.0	34.0
SHIPB	00	Z	500	1	0	0.0	19.0	19.0
SHIPS	00	Z	500	18	0	8.7	29.0	27.7
SHIPS	12	Z	500	15	0	8.7	26.9	25.5
V2LV	00	Z	500	25	0	12.0	12.2	1.9
V2LV	12	Z	500	23	0	13.0	13.6	4.0
V2LX	00	Z	500	25	0	12.0	12.5	3.7
V2LX	12	Z	500	25	0	12.2	12.4	2.0
ZDLG	12	Z	500	2	0	0.5	14.5	14.5
03953	00	Z	500	29	0	12.9	13.0	1.5
03953	12	Z	500	29	0	11.3	13.3	6.9
04018	00	Z	500	28	0	13.1	15.5	8.3
04018	12	Z	500	29	0	15.7	18.4	9.7
04220	00	Z	500	29	0	19.4	19.9	4.6
04220	12	Z	500	29	0	15.5	15.8	3.2
04270	00	Z	500	29	0	13.8	14.5	-4.4
04270	12	Z	500	28	0	12.2	12.3	-0.9
04339	00	Z	500	27	0	14.6	19.4	12.8
04339	12	Z	500	28	0	13.7	19.9	14.5
04360	00	Z	500	29	0	18.7	19.1	-3.8
04360	12	Z	500	29	0	14.0	14.0	-0.2
08001	00	Z	500	27	0	13.9	15.6	7.2
08001	12	Z	500	27	0	16.9	17.2	3.3
08508	00	Z	500	28	0	11.1	11.6	3.2
08508	12	Z	500	28	0	23.0	23.7	-5.9
08594	00	Z	500	27	0	31.4	32.4	8.1
08594	12	Z	500	25	0	10.3	13.2	8.2
60020	00	Z	500	28	0	11.0	15.4	10.8
60020	12	Z	500	27	0	11.8	19.3	15.2
71600	00	Z	500	27	0	12.7	14.3	-6.7

WMO IDENT	OBS TIME	ELM	LEV	NUM OBS	NUM GROSS	SD	RMS	BIAS
71600	12	Z	500	28	0	12.5	12.6	1.4
72201	00	Z	500	28	0	8.6	9.1	2.9
72201	12	Z	500	28	0	9.2	10.2	4.5
72402	00	Z	500	28	0	12.2	16.2	10.8
72402	12	Z	500	28	0	11.5	14.6	9.0
74494	00	Z	500	28	0	14.2	14.4	-2.4
74494	12	Z	500	27	0	11.1	11.3	-2.1

TABLE 12

MONTHLY MONITORING OF RADIOSONDE OBSERVATIONS (COSNA)
 MONITORING CENTRE: BRACKNELL
 MONTH: November, 94

Monitoring procedures

Period		:One calendar month.
Data monitored		:Reports from each unique identifier for radiosonde TEMPs.
Area monitored		:0°N - 90°N, 100°W - 40°E
Standard of comparison		:Background field from Bracknell global model.
Position		:Average latitude and longitude for period.
Observation times		:00, 12 UTC.
Level monitored		:100 hPa.
Element monitored		:VECTOR WIND in m s^{-1}
Parameters monitored	:NUM OBS	:Number of observations available at level shown during period.
	:NUM GROSS	:Number of gross errors at level shown during period.
	:% REJ	:Percentage of observations rejected by quality control at level shown during period.
	:UBIAS,VBIAS	:Mean difference of observations of U and V components from background values at level shown excluding those with gross errors.
	:RMS	:Root Mean Square difference of observations from background values at level shown excluding those with gross errors.
GROSS ERROR LIMITS		:Defined in Appendix I.2

WMO IDENT	OBS TIME	ELM	LEV	NUM OBS	NUM GROSS	% REJ	RMS	UBIAS	VBIAS
BNOR	00	V	100	1	0	0	0.0	2.1	1.8
DB/H	00	V	100	1	0	0	0.0	-2.1	-6.5
DBBH	00	V	100	8	0	0	0.0	-1.8	0.3
DBBH	12	V	100	4	0	0	0.0	-1.1	0.5
DBLK	00	V	100	1	0	0	0.0	10.4	-7.7
EHOA	00	V	100	1	0	0	3.2	-2.7	-1.0
EHOA	12	V	100	20	0	0	3.2	-3.0	3.7
F	00	V	100	1	0	0	4.8	0.4	-1.3
FNOR	00	V	100	10	0	0	4.8	-3.8	-1.8
FNOR	12	V	100	10	0	0	5.2	-2.3	-0.3
FNOU	00	V	100	8	1	11	2.3	-32.6	2.4
FNOU	12	V	100	9	0	0	2.3	-1.8	0.0
FNPB	00	V	100	14	0	0	2.3	-0.4	0.4
FNPB	12	V	100	13	0	0	3.8	-0.9	-0.2
FNRS	00	V	100	9	0	0	3.5	0.0	-1.2
FNRS	12	V	100	10	0	0	2.9	-1.4	2.1
GACA	00	V	100	28	0	0	3.9	-0.1	-1.3
GACA	12	V	100	28	0	0	2.9	-0.9	-1.6
JBOA	00	V	100	1	0	0	2.7	-1.0	1.5
JCCX	00	V	100	1	0	0	2.6	-2.2	1.0
JDWX	00	V	100	1	0	0	2.6	4.5	1.6
LDWR	00	V	100	28	0	0	3.2	-0.1	-2.0
LDWR	12	V	100	24	0	0	3.0	-0.6	-3.1
OXYL	00	V	100	15	0	0	3.6	-0.3	-0.4
OXYL	12	V	100	15	0	0	2.4	0.1	-1.0
OZJP	00	V	100	12	0	0	1.8	0.9	1.5
OZJP	12	V	100	9	0	0	3.3	-0.5	-2.2
SHIPAA	12	V	100	1	0	0	3.3	0.7	-2.5
SHIPB	00	V	100	1	0	0	3.3	3.7	0.3
SHIPS	00	V	100	4	0	0	3.3	0.4	1.3
SHIPS	12	V	100	5	0	0	3.3	1.3	-0.8
V2LV	00	V	100	21	0	0	3.3	1.7	-1.0
V2LV	12	V	100	21	0	0	5.1	0.3	-0.6
V2LX	00	V	100	25	0	0	3.7	2.2	0.3
V2LX	12	V	100	25	0	0	5.5	-0.1	0.4
ZDLG	12	V	100	2	0	50	4.1	1.7	1.3
03953	00	V	100	26	0	0	3.3	-0.4	-1.4
03953	12	V	100	29	0	0	2.8	-1.0	-1.5
04018	00	V	100	27	0	0	3.3	1.1	-1.0
04018	12	V	100	27	0	0	2.8	-0.7	-0.4
04220	00	V	100	29	0	0	2.7	0.2	0.9
04220	12	V	100	29	0	0	3.5	0.4	1.4
04270	00	V	100	26	0	0	3.3	-1.3	2.1
04270	12	V	100	27	0	0	4.1	-0.4	2.5
04339	00	V	100	24	0	0	3.3	1.1	-0.4
04339	12	V	100	28	0	0	3.6	0.2	-1.1
04360	00	V	100	28	0	0	4.3	0.7	0.7
04360	12	V	100	28	0	0	3.7	0.4	0.4
08001	00	V	100	23	0	0	4.0	-0.3	-1.3
08001	12	V	100	24	0	0	2.8	-0.6	-1.2
08508	00	V	100	23	0	0	3.1	0.1	-0.3
08508	12	V	100	25	0	0	2.6	-1.7	0.9
08594	00	V	100	17	0	0	2.3	0.6	2.4
08594	12	V	100	11	1	8	4.3	4.6	7.0
60020	00	V	100	27	0	0	3.6	2.0	1.0
60020	12	V	100	27	0	0	4.4	-0.9	2.6
71600	00	V	100	24	0	0	5.5	-2.6	0.4
71600	12	V	100	28	0	7	4.8	-3.2	0.4
72201	00	V	100	24	0	0	2.6	0.1	-0.3
72201	12	V	100	27	0	0	2.4	-1.1	0.6

WMO IDENT	OBS TIME	ELM	LEV	NUM OBS	NUM GROSS	% REJ	RMS	UBIAS	VBIAS
72402	00	V	100	22	0	0	3.6	-0.7	-0.7
72402	12	V	100	26	0	0	3.9	-0.8	-0.6
74494	00	V	100	22	0	0	3.3	-1.7	0.9
74494	12	V	100	21	0	0	4.2	-1.3	1.7

TABLE 13

MONTHLY MONITORING OF RADIOSONDE OBSERVATIONS (COSNA)
 MONITORING CENTRE: BRACKNELL
 MONTH: November November, 94

Monitoring procedures

Period	:One calendar month.
Data monitored	:Reports from each unique identifier for radiosonde TEMPs.
Area monitored	:0°N - 90°N, 100°W - 40°E
Standard of comparison	:Background field from Bracknell global model.
Position	:Average latitude and longitude for period.
Observation times	:00, 12 UTC.
Level monitored	:500 hPa.
Element monitored	:VECTOR WIND in m s^{-1}
Parameters monitored	:NUM OBS :Number of observations available at level shown during period.
	:NUM GROSS :Number of gross errors at level shown during period.
	:% REJ :Percentage of observations rejected by quality control at level shown during period.
	:UBIAS,VBIAS:Mean difference of observations of U and V components from background values at level shown excluding those with gross errors.
	:RMS :Root Mean Square difference of observations from background values at level shown excluding those with gross errors.
GROSS ERROR LIMITS	:Defined in Appendix I.2

WMO IDENT	OBS TIME	ELM	LEV	NUM OBS	NUM GROSS	% REJ	RMS	UBIAS	VBIAS
BNOR	00	V	500	1	0	0	0.0	-7.1	-4.3
DB/H	00	V	500	1	0	0	0.0	-1.4	1.5
DBBH	00	V	500	9	0	0	0.0	0.9	1.7
DBBH	12	V	500	3	0	0	0.0	-2.7	2.7
DBLK	00	V	500	1	0	0	0.0	-3.0	7.6
EHOA	00	V	500	1	0	0	3.9	0.9	0.4
EHOA	12	V	500	21	0	0	3.9	-0.8	0.1
F	00	V	500	1	0	0	3.8	-4.6	-0.7
FNOR	00	V	500	10	0	0	3.8	0.6	0.7
FNOR	12	V	500	10	0	10	5.1	2.3	4.3
FNOU	00	V	500	9	1	10	14.0	-19.6	0.9
FNOU	12	V	500	9	0	0	5.4	-1.0	-0.8
FNPB	00	V	500	14	0	0	5.4	0.7	-0.1
FNPB	12	V	500	13	0	0	3.5	0.2	0.3
FNRS	00	V	500	10	0	0	3.7	0.3	1.4
FNRS	12	V	500	11	0	0	2.6	-0.3	0.0
GACA	00	V	500	28	0	0	3.0	0.4	-1.4
GACA	12	V	500	28	0	0	6.6	-0.4	-2.4
JBOA	00	V	500	1	0	0	4.8	-0.7	0.7
JCCX	00	V	500	1	0	0	3.0	-1.3	0.7
JDWX	00	V	500	1	0	0	3.0	-3.6	-1.9
LDWR	00	V	500	27	0	3	3.5	0.8	1.4
LDWR	12	V	500	23	0	0	4.9	1.6	-0.4
OXYL	00	V	500	15	0	0	5.4	-2.1	1.2
OXYL	12	V	500	15	0	0	3.4	-0.5	1.4
OZJP	00	V	500	12	0	8	3.6	1.3	2.0
OZJP	12	V	500	10	0	0	6.6	1.6	1.6
SHIPA	00	V	500	1	0	0	3.2	3.5	2.6
SHIPAA	00	V	500	4	0	0	3.2	-0.7	-1.1
SHIPAA	12	V	500	1	0	0	3.2	2.3	4.2
SHIPH	00	V	500	1	0	0	3.2	1.4	-1.8
SHIPS	00	V	500	18	0	0	3.2	1.2	0.5
SHIPS	12	V	500	15	0	6	3.0	-1.4	-0.3
V2LV	00	V	500	23	0	0	2.8	0.9	0.1
V2LV	12	V	500	23	0	0	2.5	-1.0	0.0
V2LX	00	V	500	26	0	0	2.6	1.7	1.0
V2LX	12	V	500	25	0	0	3.6	-1.1	0.6
ZDLG	12	V	500	2	0	50	1.7	2.3	1.3
03953	00	V	500	29	0	3	3.3	-0.1	0.9
03953	12	V	500	29	0	0	4.9	-1.7	1.0
04018	00	V	500	28	0	0	4.9	0.0	0.4
04018	12	V	500	28	0	0	4.9	-0.4	-0.5
04220	00	V	500	29	0	0	3.6	-0.7	0.0
04220	12	V	500	29	0	0	3.8	-0.8	0.8
04270	00	V	500	29	0	0	3.8	0.1	-0.3
04270	12	V	500	28	0	0	6.0	0.7	0.6
04339	00	V	500	26	0	0	2.3	-0.8	0.9
04339	12	V	500	28	0	3	4.7	0.0	1.1
04360	00	V	500	29	0	0	4.6	-1.1	-0.2
04360	12	V	500	29	0	0	3.6	-0.3	-1.1
08001	00	V	500	26	0	0	3.3	1.4	-0.1
08001	12	V	500	27	0	0	4.2	0.7	0.5
08508	00	V	500	28	0	0	3.9	1.1	1.9
08508	12	V	500	28	0	0	5.6	-0.7	0.5
08594	00	V	500	18	0	0	3.9	-0.8	0.3
08594	12	V	500	14	0	0	3.3	-2.7	-0.9
60020	00	V	500	28	0	0	3.8	-0.6	-1.3
60020	12	V	500	27	0	0	1.8	-1.6	-0.3
71600	00	V	500	26	0	0	4.1	-0.6	0.4
71600	12	V	500	28	0	3	3.7	1.4	1.6

WMO IDENT	OBS TIME	ELM	LEV	NUM OBS	NUM GROSS	% REJ	RMS	UBIAS	VBIAS
72201	00	V	500	27	0	0	4.7	0.5	-0.6
72201	12	V	500	28	0	0	2.7	0.7	-0.8
72402	00	V	500	28	0	0	3.9	0.2	0.2
72402	12	V	500	28	0	0	4.4	0.7	-0.3
74494	00	V	500	28	0	0	4.9	-0.9	0.7
74494	12	V	500	26	0	0	3.5	-1.8	1.3

APPENDIX I

1. The gross error limits for observation minus background differences of geopotential height in Tables 5,10 and 11 are:-

Level (hPa)	Geopotential height (metres)
1000	100
850	100
700	100
500	150
400	175
300	200
250	225
200	250
150	275
100	300
70	375
50	400
30	450

The weighted RMS values used in Table 5,10 and 11 are calculated using the following weights:-

Level (hPa)	Weight
1000	3.70
850	3.40
700	2.90
500	2.20
400	1.90
300	1.60
250	1.50
200	1.37
150	1.19
100	1.00
70	0.87
50	0.80
30	0.64

2. The gross error limits for observation minus background differences of windspeed in Tables 6,12 and 13 are:-

Level (hPa)	Windspeed m s^{-1}
1000	35
850	35
700	40
500	45
400	50
300	60
250	60
200	50
150	50
100	45